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Administrative History of the European Office of Aerospace Research and Development from 1952 through 1975

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Office of History
Headquarters
Air Force Systems Command
United States Air Force

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14. ABSTRACT

This document, by Robert F. Phillips, recounts the administrative history of the European Office of Aerospace Research and Development (EOARD) from its inception on 22 August 1952 to 1 July 1975. The time period spans its inception and original office located in Brussels, Belgium, the move to London over 1969 and 1970, and its assignment to various organizations including its incorporation into the Air Force Office of Scientific Research in 1975, where it remains to date. This digital version was scanned in 2012 by LtCol Scott C. Dudley, EOARD, Program Manager for Physics.

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Prepared by
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FOREWORD

This history recounts the story of the European Office of Aerospace Research and Development (EOARD) as well as its predecessor, the European Office of Aerospace Research (EOAR). The period covered is from the inception of the European Office on 22 August 1952 until 1 July 1975, approximately one year after its assignment to the Air Force Office of Scientific Research. During the course of those 23 years, EOAR (and later EOARD) was assigned at various times to the Air Research and Development Command, the Office of Aerospace Research, the Air Force Systems Command, and, lastly, the Air Force Office of Scientific Research. The intent of this history is to delineate the lineage, mission, and assignment of the European Office.

Walter L. Kraus

WALTER L. KRAUS
Command Historian
Office of History
15 December 1977

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ORGANIZING A EUROPEAN OFFICE OF SCIENTIFIC RESEARCH

At the time of the April 1945 cessation of hostilities which signaled the end of World War II in Europe, the Army Air Force, under the command of General H. H. Arnold, was beginning a major effort directed to the identification of European scientific and engineering capabilities and advances which would contribute to the capabilities of the Air Force. This initial effort was conducted, at General Arnold's direction, by a Scientific Advisory Group organized and directed by Dr. Theodore von Karman. This same interest in European research and development continued and was reaffirmed when the United States Air Force was established as a separate military service in 1947.

The scope of Air Force recognition of the value of research and development was demonstrated by organization and functional adjustments which were made as a separate and equal military service shortly after its establishment. By 1949 the United States Air Force was concluding an "agonizing reappraisal" of the future role of research and development with the issuance of a General Order creating the post of Deputy Chief of Staff for Development, Air Force Headquarters. At the same time, the Air Force established the Research and Development Command (ARDC) as a major air command effective 23 January 1950. The new Research and Development Command could not become a functioning organization for 15 months since time was required for the recruitment of personnel and the attainment of managerial competence over its widely

separated installations and activities.[1]

By that time (June 1951), the Korean Conflict had begun to make serious demands on the Air Force. As a result, ARDC became obligated to the operational commands in support of the overseas combat mission. The demands of the Korean Conflict together with the relative immaturity of the Air Force structure for research and development delayed favorable action on numerous suggestions for more fully employing the European scientific potential by some agency of the United States Air Force until 1952.[2]

A Proposal and A Response

The European Office of ARDC was "opened for business" during the week of 15 October 1952, but only after a great deal of maneuvering behind the scenes. One question which had posed a problem was: Should the scientific research program be operated in conjunction with intelligence gathering or should it be completely divorced from that operation? Each side of that question received strong support.

As early as December 1951, a strong case for the Air Technical Intelligence program in Germany had been made by Brigadier General Millard Lewis, Assistant Chief of Staff, A-2, United States Air Forces in Europe, to the Director of Intelligence, Air Force Headquarters. General Lewis proposed the establishment of a research and development scientific unit as a subbranch intelligence activity of United States Air Forces in Europe.[3]

The Lewis proposal was forwarded, in turn, to ARDC headquarters for comment and recommendation.[4] The Command recommended approval. At the same time, a Command spokesman said that while the basic ideas were possessed of merit, they were "not considered the best approach" to the maximum utilization of European science.[5]

The Command held to the view that any program designed to make use of European science must be directed by an organization familiar with research and its management, and be satisfied by individuals possessing the capabilities needed to determine the validity of the work itself. HQ USAF recommended that the Command study the problems related to establishing a regional office in Western Europe for the purpose of supporting unclassified research; and that if such a project were found feasible, authority be given to implement and to operate such an office and program.[6]

Survey Trip to Europe

While Air Force Headquarters was considering General Lewis' proposal and the ARDC response, the Standing Group, North Atlantic Treaty Organization (NATO), provided formal notification on 4 February 1952 that the United States Air Force had been designated the executive agent for the Advisory Group on Aeronautical Research and Development (AGARD). This assignment made the United States Air Force responsible for establishing a Secretariat for AGARD, and for providing administrative and logistic support for that group to be set up in Paris, France.[7]

On 10 March 1952, Colonel Oliver G. Haywood, Jr., of ARDC's Office of Scientific Research, went to Europe for a conference with General Lauris Norstad, Commanding General, United States Air Forces in Europe (USAFE), and Dr. Theodore von Karman.* Colonel Haywood and his team were charged with a twofold responsibility: (1) its members were to discuss with General Norstad the possibilities for establishing a small office of the ARDC in Western Europe to utilize the scientific potential of the region, and (2) to work out the means for implementing the AGARD Secretariat in Paris.[8]

By the time the team departed for Europe, this agenda had been expanded. The expanded agenda called for: (1) establishment of the Secretariat for AGARD; (2) establishment of an ARDC office in Europe to support unclassified research; (3) procurement of applied research and development; (4) investigation of the Human Resources Office in Paris; (5) provision of technical advice to the Commanding General, Central Air and USAFE; and (6) provisions of technical advice for the Air Materiel Command off-shore procurement program.[9]

Colonel Haywood expressed the ARDC point of view when he stated that the European Office of ARDC should become a basic research liaison office rather than one engaged in operative research. He believed that the Human Resources Research Office in Paris should be brought into any ARDC office established in Europe. He also pointed out that unless provisions were made in advance to meet the requirement implied in

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*Chairman of the US Army Air Force Scientific Advisory Board and, at the time of the proposed conferences, lecturing at the Sorbonne in Paris.

point Five, the operation of any ARDC office could be greatly hampered by urgent or excessive demands from USAFE for technical advice.[10]

Dr. Frank L. Wattendorf,* of the Office of the Deputy Chief of Staff for Development, Air Force Headquarters, was in agreement on these points with Colonel Haywood. In their discussions prior to Colonel Haywood's departure for Europe, they agreed that the proposed ARDC office in Europe would be able to keep in touch with all European projects in basic research, buy certain research projects of a more basic nature, and at the same time, keep United States industry and research agencies informed of important developments. It was the view of both Dr. Wattendorf and Colonel Haywood that, at least initially, the work accepted by the European Office should be limited to unclassified research in order to avoid any security difficulties.[11]

The relationship between the proposed European Office of ARDC and AGARD had come about for two good reasons. The directive to establish the AGARD Secretariat and the proposal for the Command's European Office had been firmed up at Air Force Headquarters at about the same time, and both involved arrangements to be consummated in Europe. Dr. Wattendorf believed that the existence in Western Europe of AGARD as a scientific advisory group and the ARDC office as a buying group should prove most advantageous in stimulating and advancing the application of the aeronautical sciences to common defense problems of the NATO nations.[12]

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*Dr. Wattendorf was a member of the Scientific Advisory Group which surveyed European research facilities in 1945, immediately following World War II.

In other words, the Air Force through the aegis of ARDC's European Office now had the opportunity to add muscle to General of the Army H. H. Arnold's dictum, "The first essential of Air Power is pre-eminence in research." The Air Force was also required to establish a Secretariat for AGARD. The environment was thus favorable for the almost simultaneous opening of the Command's European research office. AGARD would aid in coordinating international viewpoint. The ARDC would buy research. All that was needed then was to translate this into dynamic and effective reality.[13]

Locating the European Office

While Colonel Haywood's team was in Europe, the decision to establish the office in Europe had been made at Air Force Headquarters and the team was instructed to proceed with arrangements which included the selection of an office location. Of the seven locations* surveyed by the team, Brussels, Belgium, was recommended because it was the most centrally located capital of the NATO countries; it was readily accessible by air, rail, or road transport; it was close enough to Germany to permit free access into the technical areas; and it possessed excellent communication facilities, office space, and adequate community facilities.[14]

Although Air Force Headquarters had decided to establish an ARDC European Office, the activation of the office was not automatic. The

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*Dusseldorf, Stuttgart, Frankfurt, and Munich in Germany; The Hague in The Netherlands; Brussels, Belgium; and Paris, France.

association of research and development in foreign countries with the work of intelligence personnel was still a potential problem. Because an overt association would not be in the best interest of either, it was believed that the proposed research and development activity should serve intelligence but should not be established as an integral part thereof. There was also the problem of the placement of operational control of an ARDC branch office located in an area where the Commanding General, U.S. Air Forces in Europe, felt he must have overriding control of all actions of the various Air Force units operating in his theater.[15]

General Hoyt S. Vandenberg resolved these issues by divorcing overt research activities of the ARDC European Office from all intelligence activities. Moreover, the office would be geographically separated from any major military headquarters in Europe, in order "to cultivate willing association by European nationals with worthwhile projects." However, in response to General Norstad's posture on operational control, European Office procurement was placed under the administrative control of USAFE, while technical guidance and direction were the responsibility of ARDC. There would still be the problems of security, especially those concerned with a development program established in Europe. In addition, there were some problems which could only be settled by negotiation between the upper levels of the Departments of State and Defense.[16] While the settlement of these problems was not a major obstacle, negotiations between the two departments did delay the opening of the ARDC European Office from mid-May to 15 October 1952.[17]

The "Shot-Gun" Approach

In its formative period the European Office needed to earn for the Air Force the respect and confidence of the European scientific community. It was important, therefore, that there be a careful selection of officers to serve with the European Office staff during the "shot-gun approach" period -- a period when unconventional solutions were deemed necessary in order to get things moving. This would insure that the Air Force would be represented by men who, while not experts in every field, possessed a combination of fully-developed awareness of diplomacy and a generalized but firm knowledge of the scientific disciplines as they related to ARDC and Air Force mission.

Personnel capability assumed an even more important status since the initial period of organization and operation of ARDC's European Office exhibited some limitation in scope and activity occasioned by a combination of limited manning, an absence of procedural precedents, and even some lack of mission guidance. There was also the clear lack of any body of operational experience to draw on, with the result that during the shakedown period the staff was very much on its own.[18]

Guidance was provided by the Directorate of Development, Air Force Headquarters, inasmuch as that office had taken the primary action in establishing ARDC's Western European Office. Its intention was that the European Office was to be the sole contracting and monitoring office in Europe for ARDC and its centers. There were to be efforts made to transfer the monitorship of those ARDC contracts already in existence in Europe, to the European Office. The personnel of the Brussels

Office would need to work closely with AGARD and NATO and to implement recommendations from AGARD, for which the Air Force has primary interest.[19]

The European Office of ARDC was to be responsible for the preliminary screenings of all proposals submitted. It was expected that proposals for projects would be from universities, societies, industry, foreign governments, laboratories, and individuals. The magnitude of the task assigned the European Office was not reflected in the provisions made for its operation. The Office was a detached group and, as such, it was dependent upon USAFE for administrative and logistic support and upon ARDC for technical guidance and funding.[20]

Despite manpower problems, the Office did record measurable advances in terms of performing the assigned mission. From its establishment in the fall of 1952 to midsummer of 1955, the European Office of ARDC had established working relations with some 14 foreign governments, its staff had processed more than 125 proposals for research projects, and had successfully solved international, inter- and intra-agency problems basic to its mission.[21]

Reorganization

The evolving status of the European Office was clearly indicated in discussions held in the office of the Secretary of the Air Force, Donald A. Quarles, on 15 August 1955. Present at the conference were Lieutenant General Donald L. Putt, Deputy Chief of Staff for Development, Air Force Headquarters; Brigadier General Don Flickinger, first Commander

of the Air Force Office of Scientific Research; and Lieutenant Colonel Ralph J. Nunziato, the first European Office of Aerospace Research Commander, who explained the mission and operation of his recent command.[22]

Secretary Quarles believed that the European Office was a valuable adjunct to the ARDC mission and was doing a fine job, but he took exception to the multifarious growth of government and technical agencies in Europe. He believed, however, that the apparent multiplication of effort—Air Force, Army, Navy, Mutal Weapons Development Team, the ARDC European Office, the Military Assistance Advisory Group, the military attaches at the embassies, and so forth—created some confusion in the minds of Europeans as well as for some Americans abroad. He saw no immediate reason for curtailing the Air Force effort, but he urged greater activities by other agencies in Europe. He also suggested that a DoD conference be called to explore the possibilities for consolidating DoD agencies of a technical nature then operating in Europe.[23]

On 31 October 1955, Colonel Lee V. Gossick,* who succeeded Lieutenant Colonel Ralph J. Nunziato as EOAR Commander, forwarded ideas for the organization of the European Office, internally as well as within the ARDC Complex. Colonel Gossick based his organizational concept on the assumption that: (1) the mission of the office was to be along lines of an expanded research program of ARDC; (2) growth of the activity was to be gradual and dependent upon the workload established by Command budgetary limits in support of research in Europe; and

*Colonel Lee V. Gossick succeeded Lieutenant Colonel Ralph J. Nunziato as EOAR Commander in June 1957.

(3) the establishment by the Army, or the Navy of an agency similar to or in conjunction with the Air Force European Office mission would not affect that office except possibly at administration level and through interservice agreements.[24]

The EOAR Commander recommended that the European Office be reorganized to function effectively in the three areas of activity which represented its stated mission: (1) technical operations and project monitorship, (2) procurement, and (3) support. Technical operations and procurement would require close coordination within the European Office. He expressed the view that it would be more appropriate for the European Office to report directly to Command eadquarters than to the Air Force Office of Scientific Research (AFOSR), since over-all function of the Brussels office related as much to the various Command research and development functions as it did to those of AFOSR.[25]

Colonel Gossick believed that the geographical separation of the European Office from Command Headquarters required a staff focal point to act promptly on matters affecting the European mission. However, he did not recommend immediate changes and saw no reason why the status quo could not continue even if changes were instituted later. Following a conference at ARDC Headquarters between General Power, ARDC Commander and Brigadier General Don Flickinger on 19 December 1955, some of Colonel Gossick's recommendations were adopted as Command policy. The European Office would continue to report to Command Headquarters as a special activity group of the 6590th Squadron, Detachment No. 1, in order to emphasize the stature and technical importance

of the European effort to the entire Command. At the same time, the European Office for all intents and purposes, functioned organizationally at Headquarters level. The final effort of this alignment was to assure that the European Office would look to the ARDC headquarters staff for both technical guidance and resources.[26]

In the absence of more formal arrangements between Command Headquarters and the European Office, research proposals would be forwarded from Brussels directly to AFOSR.[27]

Research Proposal Funding

Although the reorganization of the European Office of ARDC increased the capability of the activity to perform its mission, it also illuminated two situations which had been effective roadblocks to the implementation of the program since its inception. Those were:[28]

> (1) The non-support of European Office proposals from the European Office which already had been approved by a Center, for the reason of lack of funds.
>
> (2) The extremely long reaction time in the funding of all approved proposals.

Authorization to approve projects in Europe had been only recently granted to the Commander of the European Office, and then only for inclusion in the program of AFOSR in any case in which the total figure of the contract did not exceed $5,000. Inquiries were sent to all Command centers requesting suggestions for shortening evaluation and

approval time for European proposals, and ARDC long-range planning documents were to be made available to the European Office in order better to explore the areas of center interest. Neither of these actions, however, ameliorated the main problems.[29]

A major problem was that of having good research proposals, which already had been approved by the center concerned as a part of its program, go unfunded because funds were not budgeted. Consideration needed to be given to the possibility of estimating and programming a certain amount of moneys from each center at the beginning of each fiscal year in order that a reasonably firm figure of expected workloads would be available to the European Office and to Command Headquarters as a part of the total program of the centers.[30]

While this funding problem also affected the domestic research program, European scientists were less able to mark time while the Air Force ran their proposals through a slow-motion winnowing machine. Then, too, because of the European inability to comprehend that an agency of the United States Government could be without funds, the delays and rejections were devasting to the program. Delay or outright rejection of a project could be explained and qualified to a degree, but the acceptance of a proposal, followed by its rejection because of lack of funds, could not be understood by European scientists. On the other hand, the reasonably firm figure concept was tantamount to a flexible research budget for the European Office and was thus counter to the Command philosophy of requiring center integration of all research procured from whatever source.[31]

On 20 December 1955, the Air Force Office of Scientific Research advised Colonel Gossick that a plan was being worked on which would provide quick reaction capability [funding] (QRF)* on all proposals. But seven months were to pass before the QRF was a working reality with sufficient money set aside to give the system real meaning. Meanwhile, both the United States Office of Naval Research, London (ONR/L), England, and the United States Army, Frankfurt, Germany, began planning for an enlarged European research and development program.[32]

The "QRF for Research" was formally established under Project 7776 on 31 July 1956, and $200,000 was marked for the task. These funds were controlled by the Director of Research, Deputy Commander for Research and Development, ARDC. Half the amount was to be used to support the Brussels Office, while the remainder was to be used to support QRF at the centers. Nothing was changed in existing procedure which required evaluation of a proposal by the appropriate center, and the Director of Research at Command Headquarters made the determination that the center was or was not in a position to fund the research proposal in question.[33] The Plans and Programs Division, Director of Research at Command Headquarters, developed "ground rules" for the use of QRF for the European Office on the following assumptions:[34]

> (a) if it were desired that the appropriate Center make a technical evaluation of all European proposals, even those needing QRF;

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*Originally called Quick Reaction Capability (QRC), it was changed so as not to confuse it with the QRC associated with electronic countermeasures activities.

(b) if QRF funds were to be used only when a Center could not fund a proposal from within its own budget; and,

(c) if proposals warranting QRF occurred relatively infrequently and would truly be unusual rather than normal situations.

The Director of Research at ARDC headquarters, Colonel Leslie B. Williams, advised on 17 August 1956 that QRF was available for use by the European Office. The centers had already been informed of the criteria and procedures established for use of the fund. Colonel Williams suggested that, since the Center where the proposal was evaluated might not be aware of the urgency associated with a particular effort, a situation could develop where quick funding was needed. In such a case, the European Office should inform the Center involved of the circumstances which warranted quick reaction research funds. At the same time, the European Office would notify ARDC headquarters so it would be primed for action. Colonel Williams was confident that the new procedure would satisfy the need for a truly quick funding capability for research to handle the special cases which invariably arose.[35]

Although the European Office staff was grateful that QRF was finally established, the staff members were still not certain that QRF would fulfill their needs. The rules and regulations initiated by Command Headquarters for use of the money seemed less flexible than originally envisioned, but all personnel concerned felt that the procedure should be given a fair test of both time and use before objections were entertained.[36]

The ARDC centers were first to make use of QRF for research in Europe. A request for allocation of QRF for research proposals was forwarded to Command Headquarters on 18 October 1956. The European Office ground rules for employment of QRF carefully noted that QRF would be used only when all of the factors in a given case led to the conclusion that the action was warranted from the standpoint of the overall USAF research and development program and in the public interest.[37] Three contingencies were set forth as meeting these criteria:

> (a) When the work proposed fell into a field of high priority interest to the USAF and failure to act quickly would deny the USAF an increased capability;
>
> (b) When it was politically astute from the overall stature of the USAF European program, and the maintenance of the high standing which the USAF enjoyed with the European scientific community; and,
>
> (c) As a last resort when normal processes would result in important research being unsupported.

Authority to recommend the use of QRF as stated in (a) and (b), above, were vested solely in the Commander of the European Office, and final approval was to be obtained in accordance with procedures established by ARDC. In the case of paragraph (c) above, the procedure remained the same except that the concurrence of the appropriate center commander was required. With the fund physically located in ARDC headquarters, the procedure established by the European Office was aimed at the most expeditious use of QRF as the situation warranted. In order to insure that all recommendations originating with the European Office were thoroughly evaluated prior to referral to ARDC

headquarters, they were reviewed by a board at the European Office for review and concurrence.[38]

Coordination with the Army and the Navy

Another facet of the European Office was the need for establishing some basis of agreements with the Army and Navy office in Europe which had been established for the same general purpose as the EOAR. An Army/Air Force meeting was held on 9 July 1956 in Frankfurt, Germany. Air Force representatives noted that the Army group possessed the capability to tap its own funds once a technical evaluation of a proposal was received. The difficulty was that the Army's direct lead item financing of European research would have a reaction time on final consummation of a proposal from 30 to 45 days shorter than ARDC's European Office.[39]

There was no immediate problem since the Army was just getting started, but in a matter of 12 to 18 months the shorter processing time might become a fairly significant factor in the Army's favor. The December 1955 plan called for an open line item at ARDC headquarters which the Commander, European Office, could use as a quick reaction capability when he felt it was to the best interests of the Air Force. If such a program were implemented, the potential for a shorter reaction time on the part of the Army would be no cause for concern.[40]

The Office of Naval Research at London had been established early in March 1946 as one of the branch offices of the Navy Office of Naval Research. Its primary mission was vastly different from that of the

European Office of ARDC, and it did not maintain a contract program in Europe. Initially, the Navy had not contemplated any substantially increased future general sciences program. By the summer of 1956, however, the Navy felt that there probably was good research potential in Europe that would be of interest to the Navy, yet not necessarily of interest to the Air Force or the Army. Thus, by July 1956, the Navy was in the midst of embarking on a European research and development contracts program on a trial basis for one to two years.[41]

The European Office of ARDC held a series of meetings with the commander and staff of the ONR/L in order to insure maximum coordination of their related, though basically different, missions. On 24 May 1956, a Memorandum of Agreement was formulated with respect to coordination responsibilities, and nine months later a final agreement was executed with the Office of Naval Research, London, and the United States Army Research and Development Liaison Group, Frankfurt.[42]

The Memorandum of Agreement was a delineation of differences in basic missions among the services, and it spelled out the modus operandi for fully cooperative operations in the research and development effort in Europe. Joint coordinating procedures served effectively to answer whatever questions might be raised on the part of the Department of Defense or of the Congress concerning duplication of research and development efforts. At the same time, the agreements removed, however temporarily, the threat of consolidation of the three Services' research and development activities in Europe.[43]

Research Procurement Procedures

The procedures evolved for procurement of European research and development were flexible enough to provide for a great variety of situations, political and economic as well as technical. It was necessary, in the first instance, to effect arrangements with each of the governments of the 14 countries where the European Office of ARDC desired to place contracts. In addition, members of the European Office staff worked in close cooperation with the USAF Air Attaches stationed at the various embassies and consulates in Europe.[44]

Interest in the Air Force research program in Europe was further stimulated through a series of conferences attended by members of the European Office staff, visits to various institutes by the staff and visiting scientists, and through Air Force sponsorship of scientific conferences, symposia, and technical briefings. In such meetings, the European scientists were apprised of Air Force research objectives areas of research where problems had been encountered, and of the means by which proposals for research projects could be submitted for consideration.[45]

The working philosophy of the European Office staff was that they avoided any dictation to the European scientists; that better research resulted from work which was of great interest to the individual scientists and for which the Air Force shared a mutual interest. Unsolicited proposals received at the Brussels Office were screened for quality and Air Force interest, and were then referred to the appropriate ARDC center for complete technical evaluation, based upon the

possible applicability of the proposed research to that Center's program. When research projects were accepted by a center, the European Office of ARDC was notified. Funds to support the project were transferred from the center to Headquarters USAFE at Wiesbaden, Germany, and a contract was negotiated through the Brussels office.[46]

By this procedure, European research and development proposals competed on an equal basis with domestic research proposals; however, a dollar spent on European research would buy from three to five times more research than would an equal expenditure in the domestic market contributed to the expansion of the European Office program by the end of 1956. The fact that 84 percent of all proposals submitted to the European Office were brought by the centers was indicative of the high-quality research effort being recruited for ARDC.[47]

Second in importance only to its primary mission ("to procure in Free Europe research and development in support of the Air Force. . .") was the European Office role of liaison with the European scientific community. Historically the major portion of basic research and applied science underlying modern technological development came to America from Europe.*

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*An interesting comparison on this point is the breakdown of recipients of the annual Nobel Prize in physics: from 1901, the year of origin, to 1925, 31 persons were named; of these, 29 were Europeans. Only 2 Americans received the award in the same period. From 1926 through 1956, there were 35 awards made in physics: 19 went to Europeans, 14 to Americans, and 2 to Asiatics. Thus, while there had been a healthy increase in the number of Americans who received the Noble Prize in physics, the fact remained that three out of four awards went to scientists outside the U.S., and some Americans who were named for the prize were either naturalized citizens from Europe or first generation Americans of European parents.

One of the basic problems recognized by at least a few Air Force leaders early in the decade following World War II was the urgent necessity for extending the fund of scientific knowledge through increased basic research. The existing pool of accumulated scientific knowledge was massive and complex to a degree which staggered the imagination of the initiated; yet it was not enough. Basic scientific information, stemming from investigations into fundamental natural phenomena, needed constantly to be identified, related, and augmented. Americans were not unmindful of the fact that in modern times European-trained scientists made fundamental contributions to the development of the twentieth century's most spectacular new war machines -- contributions out of all proportion to their numbers.[49]

It naturally followed, then, that theoretical research and investigations into fundamental scientific problems could be done in Europe; certainly at less cost to the Air Force and probably as well or better than in the United States. The European Office of ARDC staff had to learn how to proceed with the task of meeting and selling Air Force research to a renascent European scientific community which was sick of war and fearful of its recurrence. Language differences did not present as serious a problem as did the numerous rules and regulations of the Government relating to expenditure of public moneys.[50]

One of the most troublesome problems stemmed from the differences in organization between the typical American university and the European institutions. In Europe, it was necessary to deal directly with the principal scientific investigator, rather than the business

office. The scientists conducted their own negotiations, wrote their own correspondence, and were typically assisted in the laboratory by a few graduate students, doctoral candidates, and perhaps one or more doctor associates.[51]

Summary

Thus, at the end of its initial five years of operation, the European Office of ARDC's association with European scientists reflected a carefully established professional relationship between individuals. The EOAR staff was careful to preserve those working arrangements and to avoid overt association with Air Force intelligence teams or agencies such as the Mutual Weapons Defense Program under the North Atlantic Treaty Organization.[52] By the end of 1956, the European Office was in a position to be highly selective in its choice of research proposals. Moreover, integration of basic reasearch into center programs was insured by holding all European Office activities and plans subject to the wishes of the center which supported the research.[53]

The ARDC program as of 31 December 1956 had 146 active contracts in 14 countries, amounting to a dollar value of slightly over $2-3/4 millions. Nineteen new proposals were received by the European Office in December, and 56 proposals, approximating nearly $3/4 million, were under evaluation at ARDC centers. Purchase orders of items for test and evaluation, amounting to $82,520 and placed in France, Germany, Switzerland, and the United Kingdom, were acted upon for five centers during the same months.[54]

Notes

1. Transcript of Proceedings of the Air Staff, Pentagon Building, Washington, DC, 3 Jan 50; ltr, Gen Donald L. Putt, Mil Dir, SAB, to Dr. Theodore von Karman, subj: [announcement of decision to establish DCS/R&D and ARDC], 27 Feb 50; History of Air Research and Development Command, 23 Jan 50 - 30 Jun 51, I, 35 ff [hereinafter cited as Hist of ARDC].

2. See note above.

3. Ltr, Brig Gen Millard Lewis, Asst CofS, A-2, USAFE, to Dir of Intel, HQ USAF, subj: [proposed establishment of R&D scientific unit in HQ USAF], 19 Dec 51.

4. Ibid., 1st Ind, 10 Jun 51.

5. Ibid., 2d Ind, 5 Feb 51.

6. Ibid.

7. Msg, HQ USAF AFDDC-PG 54062, personal, Gen Hoyt S. Vandenberg to Lt Gen Lauris Norstad, subj: [ARDC's Western European Office and AGARD Secretariat], 5 Mar 52; ltr, Gen Putt to Dr. von Karman, subj: [USAF selected executive agent for AGARD], 21 Jan 51; rept, "Proposal for the Establishment of an International Resources Coordinating Subcommittee within the Framework of NATO," 24 Jan 51, prepared by Paul Cherney.

8. Msg, HQ USAF AFDDC-PG 54062, personal, Gen Vandenberg to Gen Norstad, subj: [ARDC's Western European Office and AGARD Secretariat], 5 Mar 52.

9. Airborne msg, Col O. G. Haywood, Jr., Chief, OSR, Hq ARDC, to CG [Commanding General] ARDC, subj: [personal views on team agenda as related to basic mission], 15 Mar 52.

10. Ibid.

11. Memo for Lt Gen L. C. Craigie, DCS/D, HQ USAF, from Dr. Frank L. Wattendorf, Fac Div Ofc, Asst for Dev & Programming, DCS/D, HQ USAF, subj: Selected Items of European Research and Development, 7 Mar 52.

12. Ibid.

13. Ibid.

14. Memo for Gen Craigie from Maj R. J. Nunziato, Chief, Policy Gp, AFDDC, HQ USAF, subj: DCS/Development, ARDC, APGC [Air Policy Group Committee] Responsibilities in Western Europe, 9 Apr 52; msg, Col Haywood to CG USAFE, Wiesbaden, for Maj Nunziato, subj: [establishment of ARDC office Europe approved], 27 Mar 52.

15. Memo for Gen Craigie from Maj Nunziato, subj: DCS/Development, ARDC, APGC Responsibilities in Western Europe, 9 Apr 52; article, Dr. Wattendorf, "Theodore von Karman, International Scientist," Z. f. Flugwissenschaft, 4 (1956), Heft 516, pp 163-165; Memo for Maj Nunziato from Gen Craigie, subj: Wire Van-Norstad on European office of ARDC, 1 Mar 52; ltr, Gen Lewis to Dir of Intel, HQ USAF, subj: [proposed establishment of R&D scientific unit in HQ USAF], 19 Dec 51, 3d Ind, 18 Feb 52.

16. Msg, HQ USAF AFDDC-PG 54062, personal, Gen Vandenberg to Gen Norstad, subj: [ARDC's Western European Office and AGARD Secretariat], 5 Mar 52; ltr, Gen Craigie to Dr. von Karman, subj: AGARD Secretariat and ARDC's European Office], 14 Apr 52; Memo for Gen Craigie from Dr. Wattendorf, subj: Selected Items of European Research & Development, 7 Mar 52; ltr, Gen Putt to Lt Gen Earle E. Partridge, Comdr ARDC, subj: [implementation of AGARD by establishing an ARDC European Office], 1 Feb 52.

17. Msg, HQ USAF AFDDC 42482 to AGARD, Paris, France, for Maj Nunziato, subj: [ARDC office in Europe does not have official status], 16 May 52; msg, SEC of State to Am Emb, Brussels, subj: [inform Belgian Foreign Office on ARDC European Office establishment], 22 Jul 52; msg, HQ USAF AFDDC 44448 to CG ARDC, subj: [formal notification of authority to proceed with establishment of ARDC European Office], 8 Aug 52; ltr, Maj Nunziato, Comdr EOARDC, to Maj Gen James E. Briggs, Asst DCS/D, HQ USAF, subj: [unofficial request for concurrent travel, diplomatic passport, and report of opening EOARDC for business], 3 Nov 52.

18. Hist of ARDC, Jul-Dec 56, I, 223-225.

19. Ltr, Gen Craigie to CG ARDC, subj: ARDC's Western European Office, 3 Jul 52. See also msg, HQ USAF AFDDC 44448 to CG ARDC, subj: [authority to establish EOARDC], 8 Aug 52; ARDC GO 48, 14 Aug 52.

20. Memo for Maj Gen S. R. Harris, OCofS, HQ USAF, from Col Haywood, subj: Functions of ARDC Western European Office, 30 Dec 52; Memo for Dr. Lombard from Col Paul T. Cooper, Chief, Policy Gp, DCS/D, HQ USAF, subj: ARDC's Western European Office, 6 Feb 53; Memo for Gen Craigie from Col Cooper, subj: European Office, ARDC, 9 Feb 53; msg, Comdr ARDC RDTR to Comdr Det 1, 6590 Spec Acty Gp (EOARDCO), subj: [ARDC support of EOARDC], 25 May 55; I.G. Rept of General Inspection, EOARDC, para VII, 13b, 10 Nov 55.

21. Memo for RDSO via RDTA from RDTR, subj: Request for Space Authorization, 17 Jun 55; OIS/ARDC Release 91-55, 28 Jul 55; Hist of ARDC, Jul-Dec 56, I, 231-232.

22. Memo for Lt Gen Thomas S. Power, Comdr ARDC, from Brig Gen Don Flickinger, subj: [conference with the Secretary regarding EOARDC], 28 Oct 55.

23. Ibid.

24. Ltr, Col Lee V. Gossick, Comdr EOARDC, to Comdr AFOSR, subj: Comments on the Organization of the European Office, 31 Oct 55.

25. Ibid.

26. Memo for the Record by Brig Gen Flickinger, subj: General Flickinger's Discussion with General Power on the European Office, 19 December 1955, 23 Dec 55; ARDC GO 58, 3 Sep 54.

27. Memo for the Record by Brig Gen Flickinger, subj: General Flickinger's Discussion with General Power on the European Office, 19 December 1955, 23 Dec 55.

28. Ltr, Col Gossick to Comdr AFOSR, subj: Authorization to Approve Projects in Europe, 18 Oct 55; ltr, Brig Gen Flickinger to all ARDC Centers, subj: [evaluation and funding of EOARDC proposals], 15 Dec 56.

29. Memo for the Record by Brig Gen Flickinger, subj: General Flickinger's Disucssion with General Power on the European Office, 19 December 1955, 23 Dec 55.

30. Ibid.

31. Ibid.; msg, AFOSR-12-3-E to Comdr ARDC, subj: [organization of EOARDC and letter of communication], 20 Dec 55.

32. Ltr, Comdr EOARDC to Comdr ARDC, subj: [meeting with Col Freeman and the need for QRC for research], 13 Jul 56; Memo for the Record by Lt Col Raymond E. Nelson, Chief, Tech Ops, EOARDC, subj: Meeting with Colonel Monroe E. Freeman, Chief, US Army Research and Development Liaison Group, Frankfurt, Germany, 9 Jul 56.

33. Memo for Col Leslie B. Williams by Maj Walter W. Sanders, subj: QRC for European Office, 11 Sep 56.

34. Ltr, Col Williams to Brig Gen Flickinger, subj: [QRC for European Office], 17 Aug 56.

35. Ltr, Brig Gen Flickinger to Col Homer A. Boushey, Asst Dep Comdr/ R&D, Hq ARDC, subj: [comments on QRC procedure], 30 Aug 56.

36. Memo for Col Williams by Maj Sanders, subj: QRC for European Office, 11 Sep 56; notation by Col J. C. Dieffenderfer, Asst Dir, Dev Prog, same subj, n.d.

37. Memo to Gen Flickinger by Col Nelson, subj: Standing Operating Procedure for Use of QRC Funds, 4 Oct 56.

38. Memo by Maj Sanders, subj: [status of QRC funds], 27 Nov 56.

39. Ltr, Comdr EOARDC to Comdr ARDC, subj: [meeting with Col Freeman and the need for QRC for research], 13 Jul 56; Memo for the Record by Lt Col Nelson, subj: Meeting with Colonel Monroe E. Freeman, Chief, US Army Research and Development Liaison Group, Frankfurt, Germany, 9 Jul 56.

40. Memo for Chmn, Coord Committee on Gen Sciences, from Dept of the Navy, ONR, subj: Navy Support of Sciences in Foreign Countries, 5 Oct 56; ltr, Col Leslie B. Williams, RDTR, to Brig Gen Flickinger, subj: [ONR interest in R&D contracts in Europe], 29 Aug 56.

41. Ltr, Comdr EOARDC to Comdr ARDC, subj: Status of Coordination of EOARD, ONR-London, and U.S. Army R&D Liaison Group Activities, 14 Jun 56; Agreement between EOARDC and ONR/L titled, "Coordination of Activities-European Office Air Research and Development Command; Office of Naval Research, London Branch; and United States Army Research and Development Liaison Group," 13 Dec 56; ltr, Brig Gen Flickinger to Brig Gen M. C. Demler, DC/R&D, Hq ARDC, subj: [transmittal of triservice agreement], 14 Dec 56.

42. Ltr, Comdr EOARDC to Comdr ARDC, subj: [Tri-Service agreement of coordination on R&D in Europe], 14 Dec 56; signed Agreement among EOARDC, ONR/L, and USA R&D Liaison Gp, 13 Dec 56; ltr, Brig Gen Flickinger to Col Raleigh H. Macklin, Air Attache, Am Amb, Paris, subj: [coordination of R&D effort in Europe with USA R&D Liaison Group], Aug 56.

43. DF, Col Homer A. Boushey, RDT, to RDTR, Hq ARDC, subj: ARC for Unfunded But Approved Research Efforts, 31 Jul 56.

44. EOARDC Monthly Report of Activities, Dec 52, Jan 53; Hist of ARDC, Jul-Dec 56, I, 251-253.

45. Hist of ARDC, Jul-Dec 56, I, 252-253.

46. Ibid., pp 253-254; rept, Lt Col John J. Wolf, thru Comdr EOARDC, to CG ARDC, subj: "General Inspection of European Office, ARDC, 5-19 October 1957 (Auth: AFR 123-1, dated 12 April 1956)," 7 Nov 56.

47. Hist of ARDC, Jul-Dec 56, I, 254-255.

48. Ibid., pp 255-256.

49. Ibid., p 256.

50. Ibid., pp 256-257; rept, Col John W. Carpenter III, IG, Hq ARDC, thru Comdr EOARDC, to CG ARDC, subj: "Report of General Inspection, European Office, ARDC (10-19 October 1955)," 10 Nov 55.

51. Hist of ARDC, Jul-Dec 56, I, 253-254; rept, Lt Col Wolf, thru Comdr EOARDC, to CG ARDC, subj: "General Inspection of European Office, ARDC, 5-19 October 1957 (Auth: AFR 123-1, dated 12 April 1956)," 7 Nov 56.

52. Hist of ARDC, Jul-Dec 56, I, 258.

53. Article, "ARDC European Office," USAF Research & Development Quarterly Review (fall 1956), pp 83-87; rept, Dr. Bob White, AFCR, GRD/CRZF, to Dr. M. Greenberg, Dir GRD, AFCRC, subj: [report of a trip to Europe, 29 Aug to 29 Nov 56]; Memo for File by Dr. John S. Burgess, Chief, Radar Lab, Dir of Control & Guidance, RADC, subj: Report of Trip to EOARDC and Various European Agencies by Dr. John S. Burgess During the Period 21 October to 19 November 1956, 18 Dec 56.

54. Hist of ARDC, Jul-Dec 56, I, 259.

Chapter 2

THE EUROPEAN OFFICE OF AEROSPACE RESEARCH COMES OF AGE

The next period of the European Office was ushered in by two very special occurrences: first, the great Air Force austerity drive of the summer and early fall of 1957, which had passed into memory as the classic example of all such exercises, and, second, the launching of Sputnik I, with the resultant heightening of interest in research. While the impact by these events was more apparent on the domestic scene, the European Office was, to a much lesser extent, affected by the atmosphere generated by these events.[1]

Austerity Impact

The European Office operation was such that few if any of the principal austerity measures were wholly applicable to it. For example, there was little room to slash the civilian payroll at a unit such as the European Office, whose technical and administrative staff was almost wholly military and whose small civilian secretarial and support elements were partly composed of foreign nationals hired at local pay scales outside the civil service system. Even more to the point, the European Office had no budget of its own, except for certain housekeeping and other overhead expenses. The research contracts that it helped to administer were all funded by other organizations. Thus, when Headquarters ARDC ordered a 5-percent cut in expenditures on effort-type contracts (which would include most of the Command's European

contracts), the European Office was not required to take any action at all on its own initiative; it could only reduce or cancel a given research effort if directed to do so by the Stateside research center that had been sponsoring the work.[2]

Before the drive was called off, the European Office did receive orders to terminate or reduce certain contracts, or simply not to initiate certain new European projects that had received the necessary technical approval but, contrary to expectations, could not be funded. In most cases, the European Office was able to put off decisive implementation of the measures in question until the post-Sputnik, relaxation of austerity made them unnecessary.[3]

Workload Increases

The European Office not only recovered from the austerity drive but went on to double its research procurement during the whole of FY58 as compared with FY57. As early as November 1957, Colonel Gossick was emphasizing to Headquarters ARDC that the status of international technology and the resultant emphasis on the need to utilize the full capabilities of available European scientists had led to an increase in EOAR operations. The result was a pressing need for more authorized manpower, or else to set some kind of limit on the number of proposals that would be handled. It was even claimed that in a few cases seemingly worthwhile proposals were rejected at the European Office without being forwarded to research centers in the United States for consideration simply because the program was becoming too large to manage with the existing personnel.[4]

Over the years the level of research contracting activity continued to rise, but more slowly, until it finally leveled off after Fiscal Year 1960. (See Figure 1, below):[5]

Figure 1

Fiscal Year	Research Contracting Actions	Dollar Value
1953	15	$ 250,000
1954	52	550,000
1955	47	460,000
1956	111	1,765,000
1957	141	1,460,000
1958	243	3,146,000
1959	273	3,508,000
1960	302	4,870,000
1961	318	4,508,000
1962	319	4,879,000

The total workload for any one year was even greater than the number of projects initiated, terminated, or renewed during that year, since there were always others still in effect that might require attention. At the end of Fiscal Year 1962, there were 550 research contracts and grants on the active list, valued at $15,561,675.20 -- although admittedly some of those were active on paper only awaiting formal closeout proceedings. Another index of activity was the number of technical notes and reports completed by European scientists on work supported through the European Office. This total rose from 179 in FY58 to 267 in FY59, 397 in FY60, 505 in FY61, and 810 in FY52.[6]

Manpower and Organization

The European Office obtained some additional manpower in order to cope with the spurt in overseas research contracting. Assigned personnel

totalled 45 on 1 July 1958, a figure that was substantially the same as the year before. Just one year later the number had risen to 56, and stood at 60 as of 30 June 1962* where it then tended to level off again despite occasional minor increases.[7]

Since research costs in Europe were substantially lower than in the United States, the total dollar value of programs was not an adequate standard of comparison: a given amount of money represented more separate projects in Europe, and thus a greater number of contractual actions and other details to be handled. The main factor stressed by the European Office in justification of its manning level was the need for a special handling when dealing with scientists, academic administrators, and government officials in a foreign environment in order to avoid any possibility of misunderstanding. Many negotiations of the type that would normally be accomplished by mail or by telephone were thus accomplished by the European Office through personal contact; and the periodic technical visits to contractors and grantees, which in the United States would be made only by the scientific monitors, were made in Europe by teams composed of both technical and procurement personnel.[8]

Throughout the 1957-1962 period, the European Office maintained the same internal organization, featuring a tripartite division into Directorate of Technical Operations, Directorate of Procurement, and Directorate of Resources. Yet changes occurred in the relationship

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*The actual number of manpower spaces was 67, but only 60 of those were for the European Office mission. The other seven actually belonged to Hq USAF and were carried on the EOAR unit manning document for accounting purposes only.

between the European Office and higher echelons. Since 1956 the European Office had been, in effect, on an equal plane with the major field organizations or centers of ARDC* (See Figure 2), but this arrangement came to an end with the 1959-1960 reorganization of ARDC that saw the delegation of certain headquarters functions to broad functionally-organized divisions. When the Command reorganization finally took shape, one of its features was the creation of a new Air Force Research Division (AFRD) to which was assigned the management of both the European Office and AFOSR** (see Figure 3). The AFOSR and the European Office, which was designated as Detachment #1, thus became a part of AFRD effective 15 January 1960.[9]

The establishment of AFRD brought no major change in the mission, name, or method of operation of the European Office. Perhaps its chief effect as viewed from Brussels -- and a largely temporary one at that -- was a decline in the efficiency of Stateside support provided to the European Office and Command Headquarters. It also reflected the inevitable growing pains of a new and untried organization, AFRD; and, as headquarters AFRD became a more effectively functioning element, these difficulties steadily diminished.[10]

The subsequent reorganization of 1 April 1961 -- in which AFRD became the Office of Aerospace Research (OAR), an independent operating

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* AFOSR and the Armed Services Technical Information Agency being regarded as "Centers" also, despite their official designations.

** Det #1, AFRD (European Office, ARDC) designated and organized 15 Jan 1960.

Figure 2

AIR RESEARCH AND DEVOPMENT COMMAND

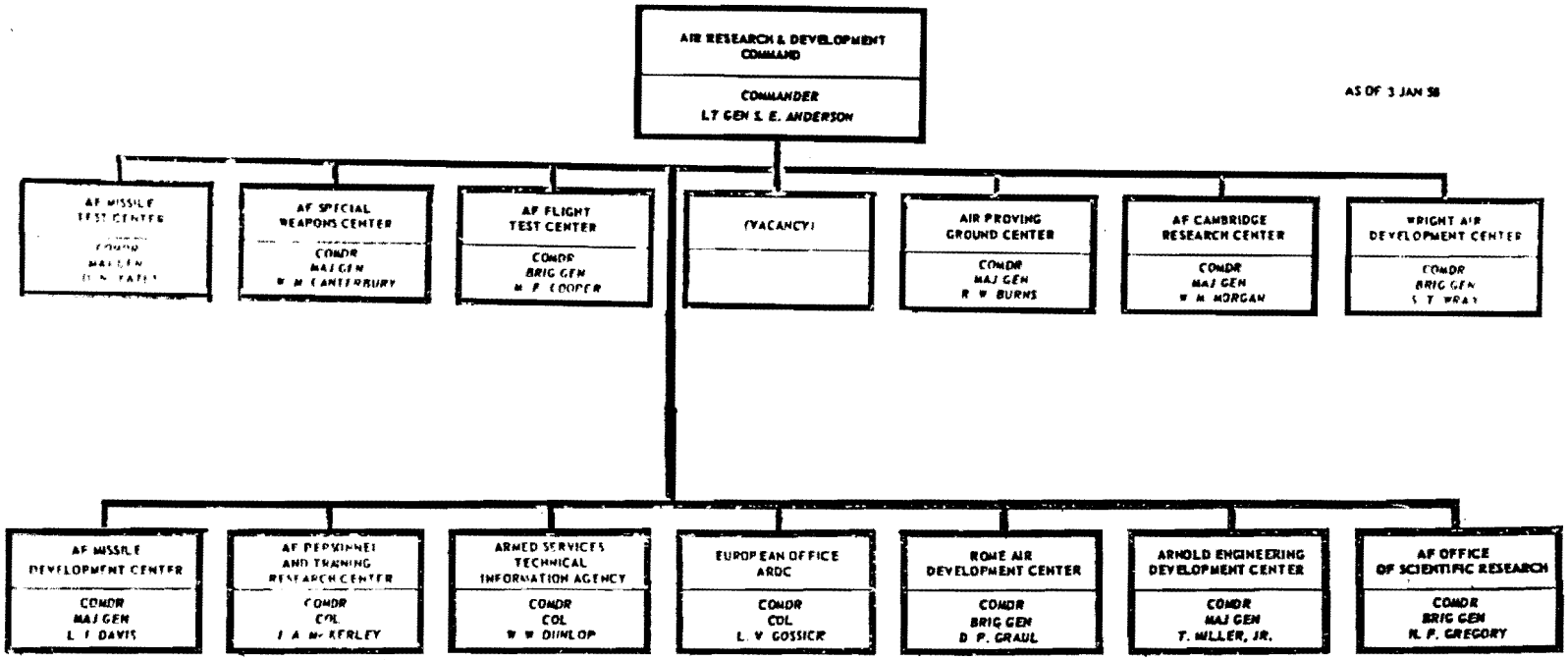
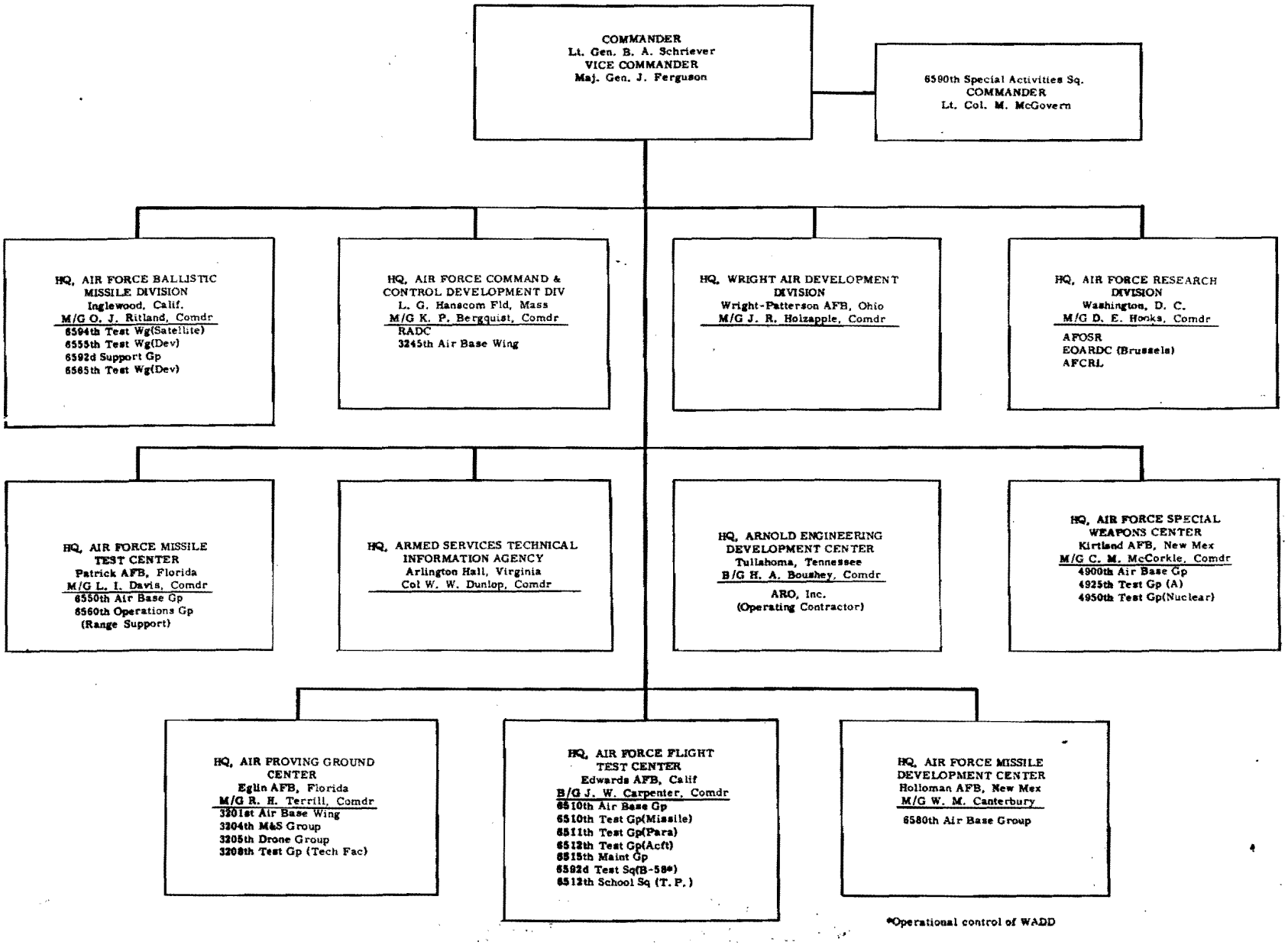


Figure 3

AIR RESEARCH and DEVELOPMENT COMMAND
As of 31 December 1960



*Operational control of WADD

agency directly under Headquarters United States Air Force (USAF) -- had even less impact on European Office operations. The European Office automatically became a part of OAR on the same terms on which it previously belonged to AFRD, the new title was simply European Office of Aerospace Research (EOAR)*. One rather minor innovation was the signing of a formal support agreement between EOAR and the 7101st Air Base Wing, Wiesbaden Air Base, Germany. The Luropean Office had been receiving a wide range of services -- e.g., commissary, accounting and finance, loan of an aircraft for mission support -- from Wiesbaden on a largely informal basis. OAR now directed that an agreement be drawn up formalizing the arrangements.[11]

New and Old Theaters of Operations

Beginning in 1958, the European Office expanded its activities geographically into three new countries: Turkey, Ghana, and Finland. The first Turkish contract went into effect in March 1958. Negotiated on behalf of the Wright Air Development Center, it was in support of a materials research effort. The initial contract in Ghana took effect in October 1960 and was written to support the project Equatorial Study of Irregularities in the Ionosphere. The sponsoring agency in the United States was the Air Force Cambridge Research Laboratories (AFCRL), L.G. Hanscom Field, Massachusetts. This was not actually the first penetration of the African Continent since there had been an earlier contract

*Designation officially changed from Det 1, Hq AFRD (EOARDC), to Det 1, HQ OAR (EOAR), effective 1 April 1961.

which expired during Fiscal Year 1958 at the University of Khartoum, Sudan.[12]

In any event, Finland was a more noteworthy addition not only for the extent of its research potential but also in view of its very delicate position as a western-oriented nation maintaining close ties with the Soviet Union. At least as late as the spring of 1960, the United States Embassy in Finland was of the opinion -- based on "unofficial contact with various members of the Finnish scientific community" -- that contracting in Finland by a United States military agency was inadvisable. Nevertheless, the European Office did receive various worthwhile proposals from Finnish scientists, and in the second half of 1961 it finally issued a grant in support of one Finnish study. The study was sponsored by the Aerospace Medical Research Laboratories at Wright-Patterson Air Force Base, and it concerned effects of extreme temperature changes on the human body. As the institution involved (The Institute of Occupational Health in Helsinki) was nongovernmental, this grant was an appropriate vehicle for testing the political/scientific climate in Finland.[13]

The addition of Finland brought to 18 the number of countries in Europe, Africa, and the Near East where research was being performed with the help of contracts or grants from the European Office. Only one full-sized non-Communist country in Europe was still unrepresented: Portugal. While proposals were received from Portuguese scientists, none had met all the technical requirements for Air Force acceptance. Inquiries were also received from Yugoslavia, but the possibility of

obtaining research in a Communist country with Air Force money had never been seriously considered although the Department of Agriculture had made research grants in Yugoslavia using local counterparts funds. The European Office received still other inquiries from Egypt and Lebanon in the Middle East, where only Israel and Turkey were then receiving Air Force research support.[14]

Even while the European Office was extending its operations into new areas, it ran into occasional difficulties in countries where it had already been working for some time. As of mid-1957, the European Office was in the final stages of resolving a problem that had arisen in Great Britain, involving principally (but not exclusively) British objections to the standard examination-of-records clause contained in United States Air Force contracts. In the end, however, it was found possible to reach agreement with the British by deleting any contract wording that appeared inconsistent with the British universities' jealously guarded autonomy.[15]

The most important problem of this general sort that arose involved Switzerland, where the national government in October 1958 made a policy decision against the acceptance of foreign military contracts at Swiss institutions. The immediate inspiration for the Swiss Government's decision seems to have been an objection raised by a University of Geneva official against a contract proposal which a professor at the University was submitting to the United States Army's European Research Office. It apparently reflected the assumptions that foreign military agencies were diverting Swiss scientists from academic responsibilities

and research topics of primary Swiss interest, that military contracting was or might become a vehicle for luring Swiss scientists away to work in the United States, and that this contracting was somehow incompatible with traditional Swiss neutrality. United States Embassy personnel in Switzerland cooperated closely in explaining the true functions and methods of research contracting by the United States Armed Services to responsbile Swiss officials. As a result, by gradual stages the Swiss policy was relaxed. Before the end of 1960, the Air Force once again had substantial freedom to acquire research in Switzerland.[16]

The European Office and the Balance of Payments

The Swiss problem -- whose intrinsic importance was easy to exaggerate for the very reason that such incidents were so few in the history of the European Office -- affected operations in just one country. The balance-of-payments crisis that began in 1960 and continued intermittently had a more general, though relatively mild, impact upon the European Office. Both in cost and in number of personnel EOAR was one of the smallest of the United States' multifarious overseas military detachments, but was the only overseas detachment of any significant size or permanence within AFRD and later OAR. It thus caused those two commands to be affected in at least some small degree by efforts to improve the United States balance of payments through reduction of overseas military expenditures, particularly in hard-currency areas such as Western Europe.[17]

On 16 November 1960 President Eisenhower ordered the Department of Defense to "reduce and thereafter limit the number of dependents abroad of military and civilian personnel"—with the reduction to come principally in Western Europe and Japan—and "to reduce by a very substantial amount the expenditures . . . for procurement abroad."[18]

In order to accomplish the first of these objectives, the Armed Services could give preference to unmarried personnel for overseas assignments, and also they could send married personnel abroad unaccompanied by their families, in which case morale factors would require some shortening of the normal tour of duty. Yet neither of these expedients was very well suited for a highly technical unit such as the European Office. The nature of the work, which combined both scientific and diplomatic aspects, required unusual selectivity in assignment.* On the whole, the Air Force had been quite successful in finding the right people. If only unmarried personnel were to be considered, the range of choice would be greatly limited. Likewise, the assignment of married men for shortened tours without dependents would interfere both with working morale and with the most effective use of experience gained on the job.[19]

*The problems involved in acquiring qualified personnel were well summarized by Colonel Gossick in a letter to the ARDC Commander: "Our problem is somewhat complicated, however, by a need by our personnel for a French language capability, an unusually solid background of experience in ARDC, personality, tact, and intelligence which will qualify the individual as an effective representative in Europe of the United States and the United States Air Force, and finally complete and mature emotion stability on the part of the individual and his family since the adjustment to a foreign, civilian environment presents a variety of problems, particularly when the officer or airman is required to be away frequently on TDY." (Ltr, Col Lee V. Gossick, Comdr EOARDC, to Lt Gen S. E. Anderson, Comdr ARDC, 27 Dec 57.)

Thus, HQ AFRD believed that it had strong arguments in favor of specifically exempting the European Office and an appropriate reclama was made on 1 December 1960. Before any action was taken on this reclama, however, and also before the start of the summer reassignment season, the new Kennedy Administration had lifted the restrictions on dependent travel.[20]

Restrictions were imposed all over again by President Kennedy in September 1961. On this second occasion, the Berlin crisis was the immediate reason given for limiting dependents' travel, but the balance of payments was still an important underlying consideration. This time the ban was issued in even more stringent form, giving little leeway for specific exemptions, so that HQ OAR made no attempt to initiate prompt reclama action such as AFRD had sought the year before. The second ban lasted longer, until April 1962.[21]

Although the various directives seeking to reduce overseas procurement did not automatically effect a single European research proposal, they reflected the fact that all types of foreign expenditures would be coming under close scrutiny. Research expenditures could hardly be an exception. In fact, HQ AFRD sent a message on 6 January 1961 to all AFRD components expressly calling for a review of "future R&D programs planned abroad. . . to determine if U.S. firms, educational institutions, non-profit research institutions or individuals possess the requisite qualifications to perform the R&D work." Moreover, the European Office had been urged at various times since the balance of payments problem first became acute to adopt or to consider

certain administrative procedures that would hold down dollar outlays without affecting the size or scope of its program. At least one such procedure had already yielded noticeable results: the wider use of counterpart funds in payment of research contracts and grants.[22]

A serious limitation of such a procedure, however, was the mere fact that counterpart funds existed mainly in the less scientifically developed countries. Thus, the European Office had projects convertible to local currencies in only three countries: Spain, Turkey, and Israel, where the total contracting in effect* as of mid-January 1961 was $16,000, $150,000, and over $1 million, respectively.[23]

The effect of the balance-of-payments situation that came to the fore in late 1960, therefore, was simply to put pressure on the Armed Services to hasten the conversion of their research procurement, wherever possible, to the use of counterpart funds. In the specific case of the Brussels office, there was at that time still just one active contract in Turkey involving the use of local currency. The full implementation of the policy in Turkey and Spain actually presented no serious difficulties and was accomplished without incident. Israel, on the other hand, offered not only the largest potential dollar savings but also the principal resistance to the change.[24]

A practical solution, acceptable by the Israelis, was finally worked out by mid-1961. Under it the Air Force paid in dollars the specific cost of foreign travel and of any equipment to be purchased in the United States. Another 5 percent of a project's face value was

*The figures refer to the face value of contracts in effect.

used to cover incidentals not readily identifiable in advance.* All the rest would be paid in Israeli pounds.[25]

Grants for European Research

Another measure urged upon the European Office as a means of improving the balance of payments was the substitution of grants for contracts as instruments for the acquisition of European research. On 6 January 1961, HQ AFRD instructed the European Office to consider the implementation of grant authority in lieu of contracts and to examine the possibility of using grants exclusively. These recommendations were principally based on the understanding that grants were simple in content and easy to manage, thus avoiding most of the rigmarole of administrative red tape. It readily allowed payment to be made in advance, thus putting fewer demands on a university's supply of working capital. Then, too, with a grant, financial reporting was at a minimum. Tedious audits, retroactive cost accounting, and complicated bookkeeping were eliminated. Therefore, the burden of administration for the grantor agency, the grantee, and the investigator was less for grants than for contracts.[26]

The Department of Defense (DoD) obtained authority to issue grants in support of basic research under the terms of Public Law 85-934, passed by the Congress in September 1958. It was under that authority that the Air Force prepared directives and regulations implementing the grant law. For Air Force purposes, this preparatory phase culminated in the January 1960 publication of ARDC Regulation 80-34,

*Comparable arrangements were made for the payment of certain costs in dollars rather than local currency in Spain and Turkey.

but it was only on 4 April 1960 that authority to issue grants was specifically delegated to the European Office. The Air Research and Development Command (ARDC) authorized the Brussels office to issue grants for periods not exceeding 5 years, in amounts up to $50,000* for any grant year—or $100,000 with ARDC approval.[27]

On 26 September 1960 the European Office made its first grant to a British university, the University of Leicester, for a chemistry research effort funded by Aerospace Research Laboratories (ARL). This did not, however, herald immediate conversion to an all-grant operation. For one thing, there were certain cases in which grants were not applicable. For another, grants could not be made to individuals. The latter reason was a more serious problem because in Germany university professors were sometimes insistent upon negotiating as individuals rather than through their institutions. Moreover, in one respect the benefit to be gained by using grants was not quite as apparent in Europe as in the United States since the European Office had pioneered the use of a fixed-price type contract** for research as distinct from the cost-reimbursement type normally used in the United States.[28]

Thus, the European Office was already making progress in the inauguration of the grant system by the time AFRD offered the suggestion that greater emphasis be placed on grants as a means of saving foreign exchange. As of 3 February 1961, there were already 15 grants in

* The $50,000 limit on grants that could be made without higher approval was removed following the establishment on 1 April 1961 of OAR, although the $50,000 limit was seldom reached in European Office operations.

**If a straight fixed-price contract was not feasible—and usually it was not—special cost-reimbursement clauses were inserted to cover particular items such as travel or equipment that could not be accurately predicted in advance.

effect, and the trend continued steadily upward. In Fiscal Year 1962 approximately 40 percent of the procurement requests handled by the European Office resulted in grants, and for Fiscal Year 1963, the proportion was considerably more than half.[29]

One reason for the low overhead in European research grants was the mere fact that university administration were relatively less overgrown bureaucratically in Europe than in the United States. Another was the fact that most grants (and contracts) issued by the European Office were in effect cost-sharing arrangements, with the Air Force earmarking its funds preferably for salaries and expendable equipment while leaving overhead costs (among other things) for the European institutions themselves to defray.[30]

Independence or Consolidation

The message of 6 January 1961 from HQ AFRD that urged greater use of the grant procedure also called for a consideration of more sweeping changes. In effect, the European Office was instructed to analyze all functions and personnel manning at the European Office of Aerospace Research (EOAR) to determine what could be eliminated, consolidated, reduced, or transferred to the Continental United States (CONUS). Heavy implementation of grant authority in lieu of contracts was to be considered. The message was primarily inspired by the balance-of-payments situation, but proposals that functions of the European Office be eliminated, consolidated, reduced,or transferred had been put forward before, and not solely for the purpose of saving dollars. Most

important was the suggestion that the separate research offices established in Europe should be combined into one organization. The suggestion was not adopted at that time, but neither was it ever decisively laid to rest. Support for the consolidation concept drew support from the general unifying tendency that had been gathering momentum since the DoD was created.[31]

The United States Navy's research unit in Europe -- Office of Naval Research, London -- had been established even before the Air Force opened its European Office in Brussels. Its mission was one of mainly scientific and technical liaisons. Early in 1956, the Navy established a Naval European Research Contracts Program (NERCP) with an office in London, but this activity still was not an exact counterpart of the Brussels operation. It lacked a procurement capability of its own, using instead the services of the Navy Purchasing Office, London, which had charge of general off-shore procurement. The European Research Office (ERO), United States Army, was established at Frankfurt, Germany, not long after NERCP. It actively sought out European research proposals that were pertinent to Army interests. It had a research budget of its own and thus controlled the funds for the bulk of the contracting it administered, whereas Air Force (and also Navy) European contracts were funded by organizations in the United States; and it relied on Signal Corps personnel at Frankfurt for its procurement functions.[32]

From the outset, all three Services recognized the need for close coordination of their European research operations. On 12 December 1956 a complete coordination agreement was signed, providing for each of the

three European research offices to keep the others informed about current contract proposals and similar matters of mutual interest. Initially, coordination meetings were held every three months for a discussion of management problems and the working out of common policies where appropriate. Starting in January 1962, special technical coordination meetings were added for joint discussion of research-support activities in particular scientific areas. Those procedures minimized duplication of effort and facilitated all types of inter-Service cooperation.[33]

Although the Advanced Research Projects Agency (ARPA) chose not to set up its own research-procurement program apart from the existing Service programs when it was established in 1958, there were still a number of additional activities with which the European Office and its Navy and Army counterparts must coordinate their work. One of these was the Science Advisory Office of NATO which made grants of support of scientific research as well as performing scientific liaison and administering fellowships. Also within the NATO framework was AGARD, which was principally engaged in information exchange. Then there was the Mutual Weapons Development Team (MWDT), with headquarters in Paris, representing all three United States Armed Services but mainly concerned (as its name indicated) with applied research and development and not with basic research.[34]

Among the nonmilitary activities with which coordination was effected by the Armed Services' European research offices, perhaps the most important was the Science Attache program of the Department of State.

Dating only from 1958, this program fulfilled mainly advisory and liaison functions.[35]

Coordination with all these other research activities took somewhat the same form as coordination among the military research offices themselves. And, yet, as indicated at the outset, not everyone was satisfied with mere coordination among the three Service research offices and between those offices and other agencies. Expressions of concern over the existence of three separate offices, each with slightly different methods of operation, were heard in meetings of the DoD's Coordinating Committee on Science at least as early as 1957. Consolidation of the offices into one, to be managed either directly by the DoD or by a single Service acting as agent for all three, was proposed at one such meeting early in 1959 by Mr. Willis B. Foster of the Office of the Assistant Secretary of Defense (Research and Engineering). Mr. Foster suggested that the existence of separate research offices in Europe was a luxury that the DoD could ill afford at a time when the State Department, NATO, and other organizations were also getting into the act of tapping European basic research resources.[36]

The recommendation advanced by Mr. Foster encountered strong objections on the part of Service representatives. At the 23 September 1958 meeting, the Committee had approved a report jointly submitted by the three European research offices outlining and, in effect, justifying their methods of operation. Two members of the Committee—Dr. Orr E. Reynolds, Director of the Office of Science, DoD, and Mr. Foster—voted against the motion to approve the report; all others representing the separate Services voted in favor.[37]

Despite such opposition, consolidation was taken up again by Dr. Robert W. Cairns, Chairman of the Advisory Panel on General Sciences of the DoD, in April 1959. Dr. Cairns stated that the Advisory Panel had been concerned for some time over the manner in which the DoD conducted its scientific liaison and research contracting activities abroad. He said that on 30 March 1959 the Panel Steering Group had agreed that the scientific relations of the DoD overseas could be strengthened through a consolidation of the basic research contracting activity in one office and the consolidation of the scientific liaison activity in another. Dr. Cairns proposed that a single Service represent the entire DoD for scientific liaison in Europe and another Service do the same for basic research contracting. He suggested the Office of Naval Research, London, for the former role, the Air Force's European Office for the latter.[38]

Dr. Cairns' proposal was duly referred to the three Services for comment. None of them was enthusiastic about the proposal. Actual unification of funding and all other administrative procedures, it was argued, would be exceedingly difficult to carry out in Europe when the Services did not follow identical procedures in the United States. In addition, if the consolidation were to be more than in name, it would tend to isolate the Air Force's European research contracting from the pertinent Air Force technical command, ARDC -- thus, diluting the close integration of European research efforts into the programs of Air Force research centers in the United States, one of the main accomplishments of the European Office.[39]

It appeared that there was no unanimity of opinion even in the DoD in favor of consolidation. Thus, the idea was not adopted at that time. But it never died completely; from time to time, it was mentioned again. Indeed, when the DoD in June 1962 announced plans to open a Defense Research Office for Latin America at Rio de Janeiro, to be operated by the Army as executive agent for all three Services but with an OAR representative to handle specifically Air Force research interest, there was renewed speculation that some sort of combined management would ultimately be adopted for Luropean research operations. There was, of course, no compelling reason to follow a South American example in the handling of European research. For one thing, there was a very great difference in scale between the Defense Department's research procurement in Europe and in South America. At the same time, there could be no assurance that the consolidation idea in one form or another would never come up again.[40]

Still, another possibility was to retain the European Office under exclusive Air Force management but move it from Brussels to Wiesbaden, Germany. Such a move was first discussed back in 1958. The idea was put aside but it came up in informal discussion once again in the fall of 1960, obviously in connection with other efforts to conserve dollars overseas. It would, in effect, have led to some dollar savings by allowing the European Offices to obtain from the vast Wiesbaden complex certain support services that it had previously been supplying with its own resources. An EOAR staff study readily admitted that a move to Wiesbaden would result in certain other savings, of which the

largest single item would be a yearly office lease costing slightly over $200,000. Some additional savings would have been possible if the European Office were also to obtain procurement services at Wiesbaden from another military office, as the Army's European Research Office did at Frankfurt, but the Brussels staff argued strongly against such a course as incompatible with the specialized nature of its mission.[41]

In any case, moving to Wiesbaden would negate the original reasons for selecting a Brussels location, which had the special advantage of making it possible to deemphasize the military symbols and the armed guards at the gate, while emphasizing the open support of unclassified research and the scientific liaison between the U.S. and the European scientific communities. It was felt that operating from a military base would be especially undesirable for contacts with scientific representatives from neutral countries such as Sweden, Switzerland, and Austria. And there were still other objections -- with the result that the Wiesbaden idea never did progress beyond the level of informal discussion.[42]

A further possibility was the one specifically mentioned in the 6 January 1961 message from HQ AFRD: namely, to imitate the European research activities of the Department of Agriculture and perform major technical and procurement action in Washington, D.C., while maintaining only a small field office in Europe. This suggestion was also opposed by the European Office, which held that any transfer of functions and personnel back to the United States would tend to undermine the close technical liaison and personal contacts that had been painstakingly

built up with European scientists and would thus lead, indirectly, to a decline in the number of high-quality proposals submitted to the Air Force for consideration.[43]

Finally, there was the possibility which had been suggested from time-to-time of making the European Office a dependency of AFOSR, the principal Air Force agency for support of extramural basic research. This idea was advanced by Dr. Knox Millsaps, Executive Director of AFOSR and Chief Scientist of OAR, in a research-management report of September 1962 in which he described the European Office as "a small and incomplete AFOSR located overseas." In the end, none of the reorganization proposals prospered. Most of them, in fact, never received more than informal consideration, the principal exception being the idea of interservice consolidation under DoD auspices.[44]

The insistence of the European Office upon maintaining its tried-and-true management philosophy might be interpreted either as unimaginative resistance to any kind of innovation or as a welcome change from the wide-spread Air Force practice of constantly reshuffling mission and organization charts. Either way, it reflected a conviction that continuity was, in itself, an important asset in obtaining the respect and cooperation of the European scientific community. In the last analysis, the most important thing about the European Office philosophy was not the way it was organized but rather its end product, which was research of interest to the United States Air Force.

Notes

1. History of the Office of Aerospace Research, Jan-Jun 62, I, 16. [Hereinafter cited as Hist of OAR.]

2. Ltr, Col Lee V. Gossick, Comdr EOARDC, to Brig Gen F. Gregory, Comdr AFOSR, 3 Oct 57; ltr, Col Gossick to Col B. G. Holzman, Dir of Rsch, Hq ARDC, 17 Oct 57; ltr, Col Gossick to Prof P. Swings, University of Liege, 23 Oct 57; interview, Mr. H. C. Jordan, Hist, Hist Div, Ofc of Info Svcs, Hq ARDC, w/Maj R. O. Griffin, Dir/Resources, EOARDC, 29 Oct 58.

3. See note above.

4. Ltr, Col N. L. Krisberg, Comdr EOARDC, to Lt Gen S. E. Anderson, Comdr ARDC, 3 Oct 58; interview, Mr. Jordan w/Maj F. L. Smith, Phys Sci Div, EOARDC, 31 Oct 58; ltr, Col Gossick to Col R. M. Grek, Dir/M&O, Hq ARDC, 27 Nov 57.

5. The figures for FY53-FY59 are taken from "Summary Contractual Actions and Funds by Fiscal Year," Atch 5 to ltr, Col Krisberg to Brig Gen D. Flickinger, Hq OAR, 16 Oct 62; those for FY60-FY62 are derived from the semiannual historical data reports prepared by the European Office.

6. The fact that report totals continued to increase sharply even after contracting activity tended to become stabilized reflects the inevitable time lag between the awarding of a contract (or grant) and the appearance of written results. For the same reason, the Fiscal Year 1962 figure also failed to reflect the recent policy of AFOSR, which was to decrease technical reporting requirements for work done under its sponsorship. (Historical Report of the European Office of Aerospace Research, 1 Jan - 31 [sic] Jun 62, p 7.)

7. EOARDC Summary of Activities During Fiscal Year 1958, and Activity Report, Apr-Jun 59; ltr, Maj E. Fraley, Ch, Pers & Admin Div, EOARDC, to Hist Div, AFRD, subj: Re for Personnel Information, 31 Jan 61; DCS/Pers, Hq OAR, "Semiannual Historical Report . . . 1 Jan-30 Jun 62."

8. Interview, Dr. David Bushnell, OAR Hist, w/Lt Col J. B. Kelley, Dir/Proc, EOAR, 12 Jun 62.

9. History of Air Research and Development Command, Jul-Dec 57, I, 267-277 [hereinafter cited as Hist of ARDC]; draft MS, Samuel Milner, "AFRD to OAR: An Organizational and Administrative History," pp 73-74; ltr, Brig Gen Holzman to Col Krisberg, 3 Mar 59; History of the Air Force Research Division, Jan-Jun 60.

10. Paper, "Comments on 'Report of the Special Task Force on ARDC Organization' by Col N. L. Krisberg, Commander, EOARDC," 25 Aug 59; ltr, Lt Col M. M. Schott, DCS/Compt, Hq AFRD, to Det #1 [EOARD], subj: Funding Procedure, FY61, 26 Feb 61; interview, Dr. Bushnell w/Col R. G. Moll, 14 Jun 62.

11. Interview, Dr. Bushnell w/Lt Col J. B. Goudy, Dir/Resources, EOAR, 7 Jun 62; rept, "Concurrent Use and Support Agreement Between European Office, Office of Aerospace Research, Brussels, Belgium, and 7101st Air Base Wing (Wiesbaden Air Base)," 1 Apr 61; ltr, Col H. R. Ebbeler, DCS/Plans & Ops, Hq OAR, to EOAR, subj: Support Agreement, 27 Apr 61; memo, Maj E. Fraley, Ch, Pers & Admin Div, EOAR, to Col P. F. Nay, Comdr EOAR, subj: [support agreement], 31 May 61.

12. EOARDC Monthly Report, Aug 56, pp 4-5, and Activity Report, Mar 58, p III-36; RDT&E Project Card (DD Form 613), Project 5631, Research in Electromagnetic Propoagation, 1 Jan 61, p 51; EOARDC Activity Report, Jun 57, p III-17, and Summary of Activities During Fiscal Year 1958, p III(a).

13. EOAR, NERCP, and ERO, Minutes of Tri-Service Coordination Meeting [hereinafter cited as Tri-Service Minutes], 19 May 60, p 4, and 19 May 61, p 4; ltr, Col P. F. Nay to Maj Gen D. E. Hooks, Comdr OAR, 6 May 61; ltr, Capt J. C. Fiorelli, Jr., to Hist Div, OAR, 16 Oct 62. The Navy had given support to research in Finland even before this, but had transmitted funds through the Woods Hole Oceanographic Institution.

14. "Brochure on EOARDC Operations," 23 Jan 61, prepared by EOARDC; Tri-Service Minutes, 19 May 61, p 4; interview, Dr. Bushnell w/Col Moll, 6 Jun 62; ltr, Maj Gen Hooks to Col Nay, subj: Basic Research in Egypt, 4 Apr 61.

15. Hist of ARDC, Jul-Dec 57, II, 294-299.

16. Memo for Record, Lt Col A. C. Trakowski, Jr., Ch, Phys Sci Div, EOARDC, subj: Swiss Ban on U.S. Military Contracting for Research, 13 Jan 59; Tri-Service Minutes, 14 Jan 59, p 3; 8 May 59, p 5; 19 May 60, p 1; and 14 Oct 60, p 2.

17. Hist of OAR, Jan-Jun 62, I, 31-32.

18. New York Times, 17 Nov 60.

19. Ltr, Maj Gen V. R. Haugen, Asst DCS/D, HQ USAF, to Dir/Mil Pers, DCS/P, HQ USAF, 1 Dec 60; ltr, Maj Gen Hooks to Lt Gen B. A. Schriever, Comdr ARDC, subj: Evaluation of the Effect on AFRD of the Reduction in Number of Dependents Overseas, 15 Dec 60.

20. See note above.

21. See note above; ltr, Maj Gen Hooks to Col Nay, 1 Mar 62; interview, Dr. Bushnell w/Col Moll, 14 Jun 62; data supplied by MSgt N. C. Brier, Sgt Maj, DCS/P, Hq OAR, 13 Feb 63.

22. TWX to all AFRD components, subj: "Supplies and Services to be Procured OUTside U.S.—Balance of Payments," 6 Jan 61.

23. Coordinating Committee on Science, DoD, Minutes, Third Meeting, 20 Dec 57, p 4; Coordinating Committee on Science, Minutes, Twelfth Meeting, 14 Jan 59; Tri-Service Minutes, 24 Feb 60, p 2; "Brochure on EOARDC Operations," 23 Jan 61, prepared by EOARDC.

24. Ltrs, Capt Fiorelli to Hist Div, OAR, 25 Sep and 16 Oct 62; Tri-Service Minutes, 3 Feb 61, p 7; inter, Dr. Bushnell w/Col Moll, 6 Jun 62.

25. Tri-Service Minutes, 19 May 61, pp 1-3, and 22 Sep 61, pp 1-2.

26. Hist of OAR, Jan-Jun 62, I, 38.

27. Tri-Service Minutes, 8 May 59, p 5; Dr. N. A. Komons, Development of the Air Force Research Grant Program (OAR 11, Hist Div, 1963), p 12; "Brochure on EOARDC Operations," 23 Jan 61, prepared by EOARDC; Tri-Service Minutes, 14 Oct 60, pp 1-2.

28. Hist Rept of EOARDC, Jul-Dec 60; interview, Dr. Bushnell w/Lt Col J. B. Kelley, 12 Jun 62; "Brochure on EOARDC Operations," 23 Jan 61, prepared by EOARDC; Hist of ARDC, Jul-Dec 57, II, 293-294.

29. Tri-Service Minutes, 3 Feb 61, p 6; Dir/Resources, EOAR, "Procurement Items for Commander's Trip to the States," 25 May 62; interview, Dr. Bushnell w/Lt Col Kelley, 12 Jun 62.

30. Hist of OAR, Jan-Jun 62, I, 22; interview, Dr. Bushnell w/Lt Col Kelley, 12 Jun 62.

31. Hist of OAR, Jan-Jun 62, I, 42.

32. MFR, Col Krisberg, subj: [background and method of operation of Army, Navy, and Air Force research agencies in Europe], 12 Feb 59.

33. Agreement, "Coordination of Activities—European Office, Air Research and Development Command, Office of Naval Research, London Branch, and United States Army Research and Development Liaison Group," 13 Dec 56; interview, Dr. Bushnell w/Col Moll, 6 Jun 62.

34. Tri-Service Minutes, 8 May 59, pp 1-2; 3 Feb 61, p 8; and 22 Sep 61, p 7; interviews, Dr. Bushnell w/Col Moll, 6 Jun and 15 Jun 62; ltr, Col Nay to Col Krisberg, Vice Comdr AFRD, 21 Dec 60.

35. Article, Science, 19 Dec 58, pp 1561-1562; Tri-Service Minutes, 3 Feb 61, p 1 and Tab B; brochure, European Office, Office of Aerospace Research, Brussels, Belgium, 1961, p 15.

36. Memo for Record, Lt Col R. J. Burger, Ch, Plans & Prog Div, Dir/Research, Hq ARDC, subj: Notes from 3rd Meeting CCS on 17 December 1957, 23 Dec 57; Memo for Record, Col Holzman, subj: Meeting of Coordinating Committee on Science, 20 Feb 58.

37. Coordinating Committee on Science, Minutes, Tenth Meeting, 8 Oct 58 [meeting date 23 Sep], and Minutes, Eleventh Meeting, 6 Nov 58 [meeting date 31 Oct]; memo, Dr. R. W. Cairns, Chmn, Advisory Panel on Gen Sciences, DoD, to DDR&E, subj: Overseas Support of Basic Research by the Department of Defense, 15 Apr 59.

38. See note above.

39. Ltr, Mr. J. B. Macauley, Dep Dir/D&E, to Dir/R&D, Dep of the Army, Asst SEC of the Navy (R&D), and Asst SAF(R&D), subj: Overseas Support of Basic Research by the Department of Defense, 6 May 59; Memo for Record, Col Krisberg, 12 Feb 59.

40. Ltr, Lt Col W. L. Jones, Ch, Liaison & Applications Div, Dir/Phys Sci, Hq ARDC, to Col Krisberg, 28 May 59; Tri-Service Minutes, 3 Feb 61, p 4; article, Aviation Week, 11 Jun 62, p 34; ltr, Col C. E. Carson, Dep Comdr OAR, to EOAR, subj: Aviation Week, Article on Consolidation of Military Agency Offices in Europe, 15 Jun 62.

41. Ltr, Lt Col Jones to Col Krisberg, 28 May 59; ltr, Brig Gen Holzman to Lt Gen Schriever, 4 Jun 59; paper, "Comments on 'Report of the Special Task Force on ARDC Organization' by Col N. L. Krisberg, Commander, EOARDC," 25 Aug 59; interview, Dr. Bushnell w/Col Moll, 6 Jun 62.

42. Ltr, Col Krisberg to Col Moll, Dep Comdr EOARDC, 14 Nov 60; "Staff Study Report," 1 Dec 60, prepared by Col Nay.

43. Ltr, Col Moll to AFRD, subj: Analysis of Alternative Methods for the Operation of EOARDC, 1 Feb 61.

44. Report, Dr. Knox Millsaps, Suggested Improvements in the Management of the Office of Aerospace Research (AFOSR/OAR, 15 Sep

44. (continued) 62), p 15; "Brochure on EOARDC Operations," 23 Jan 62, prepared by EOARDC.

Chapter 3

AUSTERE MANNING, TIGHTER BUDGETS, GOLD FLOW, AND RESEARCH PROCUREMENT

In July 1962, the Secretary of Defense directed that the procurement of supplies and services overseas be curtailed and controlled, and made it evident that the need to control gold flow in Europe and the resulting austere budgets would be one of the dominant issues of the 1960s. The future operation of EOAR would be profoundly affected by this directive. The repercussions of it were reflected in EOAR's manning, contract/grant programs (both in the amounts awarded and the total numbers written), support moneys, and travel, as well as ever stronger pressures from the Congress and the DoD for collocation with the Army and Navy research offices in Europe.

As the balance of payments worsened in 1963, the criteria for the procurement of research in Europe became more restrictive. By 1965, only research which could not be accomplished in the United States was receiving fund support. Although self-support of research in Europe increased, so did inquiries from potential USAF laboratories regarding European accomplishments for possible application to their urgent requirements for new and improved weapon systems. Furthermore, interesting scientific capabilities were emerging in Africa and the Near and Middle East.

Despite those problems, Air Force research and development objectives were carried out to the maximum extent possible, consistent with existing manpower, equipment, and consideration of the gold flow problem. In the gold flow area, austere controls were effected over

expenditures of support moneys, particularly in the realm of supply items. Gold flow, or rather the attempts to restrict it, meant a cutback in the funds of many programs, some of them, such as propulsion and aeromechanics, by as much as 21 percent. Gold restrictions also played an important role in terminating contracts with some of EOAR's top scientific investigators.[1]

OAR Team Visit to EOAR

In November 1963 Major General Don R. Ostrander, Commander of Office of Aerospace Research (OAR), appointed a team of HQ OAR personnel to make a study of European Office operations. The aspects of the problem that were studied included: (1) the adequacy of EOAR organization and manning under its then current mission, functions, and workload, (2) changes in organization and manning associated with predictable fluctuations in EOAR workload under its then current mission and functions, and (3) the desirability of reorienting or modifying the EOAR mission and functions, and making associated changes in organization and manning. General Ostrander had previously indicated that he considered the 60 manpower spaces provided EOAR to be more than would be required in the light of projected reductions in spending overseas. At the same time, he did not indicate the nature or extent of the envisioned manpower reductions.[2]

After a review of EOAR's methods of operation, the team determined that few reductions in manpower would be possible if EOAR were to continue performing its accustomed functions in accordance with

existing EOAR policies and practices. At the same time, key members of the EOAR staff advanced plausible justifications for additional manpower.[3]

After hearing the EOAR story as to the value of its activities to the user agencies and the Air Force as a whole, it became apparent that the team would have to contact the user agencies in order to determine their views. The team wanted to avoid making manpower economy recommendations without an adequate appreciation of the possible adverse effects on other Air Force organizations which were relying upon EOAR for services -- resulting, possibly, in what was sometimes referred to as a "reverse cost reduction." Since the existing mission and functions of EOAR involved the rendering of services to other Air Force organizations, it seemed fair to adopt the attitude that in any difference of viewpoints as to the value of EOAR's services, the customer would be right, unless the customer revealed a complete lack of understanding of EOAR's mission, functions, activities, and products. The team felt, nevertheless, that customer reaction would have to be tempered by overall considerations of the Air Force needs.[4]

As a result of the team's visits to the Air Force Office of Aerospace Research (AFOSR), Aerospace Research Laboratories (ARL), Air Force Cambridge Research Laboratories (AFCRL), and the Air Force Materials Laboratory (AFML) conclusions were drawn which both redefined the mission and functions of EOAR and put them into a somewhat different perspective. Those conclusions were drawn from a variety of opinions, sometimes conflicting, but essentially in agreement. User agency

attitudes were summed up in the following description of what EOAR was then and was expected to be in the foreseeable future.[5]

> a. EOAR was and would continue to be an important and valuable element in the Air Force's research and development organization. Without EOAR, the ability of the user organizations to carry out even the dwindling program of overseas procurement and technical liaison would be seriously impaired.
>
> b. EOAR was and would continue to be predominantly a procurement, administration, and technical liaison office. It was not and would not be regarded by user agencies as a scientific organization.
>
> c. Were EOAR to be abolished, it would be difficult for user agencies to accomplish the procurement, administrative, and technical liaison task for themselves. On the other hand, the closing of EOAR would not cause a serious problem from the viewpoint of its effect on scientific communications, evaluation of overseas scientific efforts and results, locating of new and valuable sources of research and development effort, and similar activities for which long-established channels existed within the scientific community.
>
> d. In order to perform the desired services in procurement and technical liaison, EOAR required some scientific and technical officers. Those should not be oriented along the lines of scientific areas so much as along "agency servicing" lines, although a good balance between those two considerations should be maintained.

In light of the contribution which EOAR could be expected to make to Air Force research and development activities, the team examined certain proposals for additional functions and workload at EOAR which might serve to take up the slack as the contract program diminished. These, too, were discussed with the user organizations.[6]

On the basis of those discussions, and particularly because of indications of differences in viewpoint between EOAR and user agencies,

the team members reviewed the mission and functional statements for EOAR. In order to achieve a sense of proportion concerning those matters, the team members said that those responsible for planning and managing EOAR operations should consider the manner in which conditions had changed since the establishment of EOAR. The assigned role of EOAR as agent for other Air Force organizations rather than as a judgment-exercising organization responsible for discharging a research and development mission must be kept in mind, the team said.[7]

The OAR team was of the opinion, on the basis of information and data gathered from the using agencies, that the technically active contract and grant workload of EOAR would diminish through FY66, in the following manner:

Time Period	No. of Contracts and Grants
End of FY63	450
End of FY64	350
End of FY65	300
End of FY66	250

The team further determined that, in general, the remaining contracts and grants would tend to be renewals and extensions rather than ventures involving new sources. This was considered an additional basis for predicting a lessening of EOAR's workload, both in the technical and the procurement areas.[8]

As a result of those factors, the OAR team believed that EOAR's staff could be reduced by seven spaces in FY64, six more in FY65, and three more in FY66. On the assumption that a general program of work simplification and cost reductions would be vigorously prosecuted,

reductions could be made as follows (figures given in "officer" - "airman" - "civilian" and "total in parenthesis" sequence):[9]

	Nov 63	End FY64	End FY65	End FY66
Command	2-0-1-(3)	*1-0-1-(2)	1-0-1-(2)	1-0-1-(2)
Dir/Tech Ops	12-1-9-(22)	11-1-8-(20)	9-1-7-(17)	7-1-6-(14)
Dir/Procurement	8-2-7-(17)	6-2-6-(14)	5-2-5-(12)	5-2-5-(12)
Staff Judge Adv	1-0-0-(1)	1-0-0-(1)	1-0-0-(1)	1-0-0-(1)
Off/Admin Svcs	3-9-5-(17)	2-8-6-(16)	2-7-6-(15)	2-7-6-(15)
TOTALS:	26-12-22-(60)	21-11-21-(53)	18-10-19-(47)	16-10-18-(44)

*Elimination of the Deputy Commander's space.

In summation, the team recommended that the reductions discussed should be scheduled, but that a recheck should be made prior to each increment of reduction to assure that conditions had not changed significantly enough to warrant reconsideration. The team also suggested a reduction in EOAR travel because of a lessening need to find new research sources and for face-to-face negotiations. A simplification of organization should be made, the team said, to eliminate internal structures which tended to stand in the way of full utilization of support personnel. Technical operations and procurement organizations should be oriented along lines which concentrated on service to state-side agencies, rather than on areas of science. To facilitate that, technical personnel should be drawn to the extent possible from the agencies being serviced, with attention given to recency of experience and knowledge of overall programs rather than depth of experience and capability in a scientific area.[10]

Funding, Manpower and Organization

Contrary to the OAR team's estimates, the EOAR contract and grant workload did not diminish between FY63 and FY66; nor in FY67 and FY68 either for that matter. (See Figure 4.)

Figure 4

Time Period	No. of Contracts/Grants	Amount
1963	508	$ 14,470,925
1964	525	14,590,631
1965	473	13,231,300
1966	503	14,542,200
1967	535	13,742,000
1968	501	18,500,600
1969	356	15,675,700

The drop in numbers of contracts and grants in the 1969 period was attributable to the phase-out of EOAR's Directorate of Procurement in anticipation of EOAR's move to London, first scheduled for 1969 and then deferred until 1970. Though reduced, the total number was still well above the 250 total predicted by the OAR team. During FY70, AFOSR began to pick up the procurement function formerly handled by EOAR. As of 30 June 1970, all active contracts and grants, as well as all procurement files, had either been transferred to AFOSR or were being prepared for transit.[11]

The numbers of purchase requests (PR) received by EOAR remained at a relatively high level during those years. (See Figure 5.) However, in preparation for the move to London and transfer of the procurement function to AFOSR, the number of PRs, like the contracts and grants, also dropped off during FY69 and FY70.[12]

Figure 5

Fiscal Year	No. of PRs Received	Total $ Value
FY63	179	$ 3,699,347
FY64	218	3,726,364
FY65	187	2,730,110
FY66	241	3,654,900
FY67	245	4,054,234
FY68	198	7,734,768
FY69	144	2,629,875
FY70	90	1,694,256

In the field of personnel, the OAR team's recommendations were generally followed, although not as rapidly as the team had suggested, and then only after an initial increase. Whereas, the team had projected a total strength for EOAR of 44 by the end of FY66, an authorized strength of 46 was actually reached only by the end of FY69, and even then assigned strength still stood at 56.[13] (See Figure 6.)

Figure 6

EOAR Personnel Strength

	Authorized	Assigned
Jun 64	26-12-28-(66)	27-14-27-(68)
Jun 65	23-14-23-(60)	23-14-21-(58)
Jun 66	24-14-21-(59)	27-16-20-(63)
Jun 67	23-14-24-(61)	26-15-24-(65)
Jun 68	23-16-25-(64)	24-15-24-(63)
Jun 69	18-9-19-(46)	19-15-22-(56)

(Figures given in "officer" - "airman" - "civilian" - "total in parenthesis" sequence.)

As a result of the OAR team's recommendations, EOAR's organization underwent several modifications by the end of 1963. The first redesignation to affect EOAR during this period was its discontinuance

as Detachment 1, Headquarters, Office of Aerospace Research (European Office, Office of Aerospace Research) and its redesignation as the European Office of Aerospace Research, a full-fledged component of OAR, on 8 October 1963. That action had no effect on the internal organization, manpower, or assigned program of the unit. The change merely legalized a relationship that had already existed in practice if not in theory.[14]

In early 1964 and again in early 1965, some additional minor reorganizations of an internal nature came about. Another minor reorganization was effective 1 May 1966; that one was concerned mainly with bringing the EOAR organization in line with the Department of Defense (DoD) program element requirements. At the same time, a reorganization in the Directorate of Procurement was approved but did not become effective until 1 July 1966. Only one minor organization change in EOAR was recorded during 1967; that one in May.[15]

And, finally, under the provisions of the 15 July 1968 Director of Defense Research and Engineering (DDR&E) directive calling for the collocation of the research offices of all three Services and the accompanying reduction of overseas research personnel, the authorized strength of EOAR was to be reduced to 21 by 30 June 1970.[16]

Transfer of Navy Contracts and Procurement Responsibility to EOAR

Agreements were reached with Office of Naval Research (ONR) and the Naval Purchasing Office, London, to transfer all Navy contracts to

EOAR beginning 1 July 1966. During the succeeding six months, an orderly conversion to Air Force contracts had been accomplished on those efforts requiring continuation or renewal. The transfer involved approximately 50 contracts. The major problem encountered in the Navy workload was the late receipt of purchase requests (PRs). The Navy project monitor in Europe was aware of that problem and pushed the Navy research office in Washington to expedite the submission of PRs.[17]

The transition from Navy contracts to Air Force contracts and procedures continued smoothly during FY67. Navy funds in the amount of $502,817 were obligated by EOAR. An additional amount of $892,494, representing 173 percent of the dollar amount invested by the U.S. Navy, was cost-shared by the contractors.[18]

A Navy Project Officer had been assigned to EOAR during FY67 and FY68, but his assignment was terminated at the end of FY68 when Navy research in Europe and the Middle East began phasing down. The lack of a Navy Project Officer within EOAR as of 1 July 1968 required that the Air Force administrative contracting officer act for the Naval Research Office in Washington. Thus, EOAR's Directorate of Procurement continued to administer all of the active Navy research contracts still on hand. On 30 June 1969, the negotiation and administration of U.S. Navy research contracts in Europe and the Middle East was transferred to the Director of Procurement Services, Office of Naval Research, Washington, D.C.[19]

Transfer of Finance Office Responsibility

During the January-June 1964 period, financial support of the European Office was changed from the 7101st Air Base Wing, Lindsey Air Station, Wiesbaden, Germany, to the Evreux and Laon Air Bases in France. Evreux furnished military pay and Laon under a newly executed support agreement, which became effective 1 July 1964, furnished all other support, including finance, supply, medical, and vehicle maintenance. Laon Air Base was the nearest military facility capable of furnishing that needed support.[20]

In accordance with a USAFE policy to decentralize activity from the Wiesbaden area, EOAR also was requested to transfer payment responsibility from the Wiesbaden to the Laon Finance Office for all contracts/grants in Norway, Sweden, Denmark, The Netherlands, Belgium, Germany, Switzerland, and Ghana. This was accomplished in a two-phased operation during 1965. And in order to facilitate EOAR/USAFE operation under barter procurement, all French contracts/grants were transferred from the U.S. Army Finance Office, Paris, to the USAF Finance Office, Laon, for payment.[21]

Then in 1966 came President DeGaulle's decision to pull French forces out of NATO. This meant that all U.S. Forces had to leave France. Accordingly, arrangements were made to transfer the payments of all contracts and grants from Laon AB to Bitburg AB, Germany. The barter account was also changed to Bitburg. Also, in order to better use EOAR barter funds, the Bitburg finance office took over the payment of all contracts and grants in Austria and Israel.[22]

Then, in 1970, as the result of the move to London, a new supply account with Lakenheath Air Base was established. A complete physical transfer and pickup of all equipment was completed, as well as processing all necessary paperwork. Groundwork was laid for opening a new budget account and the establishment of an imprest fund with the London Accounting and Finance Office, Telex and mail procedures were established with Naval activities, U.K., and a property disposal office (PDO) account and requirements established with the South Ruislip Air Base. With the phase-down of the Brussels operation, all remaining equipment was shipped either to Headquarters OAR, or turned in to supply at Bitburg Air Base, Germany. During June 1970 a team of experienced EOAR management and administrative personnel went to the London office to set up files and assist in getting the office in order.[23]

Barter Funds

In the latter half of 1975 EOAR initiated action to place the major portion of the EOAR contractual program under barter procurement. Preliminary coordinative action was taken with USAFE Procurement, USAFE Comptroller, and HQ OAR. A request to the Department of Agriculture's Commodity Credit Corporation (CCC) for determination of susceptibility was approved in September 1965. After detailed planning action with the USAFE Comptroller and Finance Offices was completed, the CCC awarded contracts to four barter contractors in the

amount of $5,050,000. This was the first barter agreemtn that was made for R&D requirements.[24]

Barter funds were received by the London and Laon* Financing Offices during the January-June 1966 period -- London received a total of $3,550,000 and Laon $1,500,000. Barter fund requirements for the second increment beginning 20 February 1967 were requested in the amount of $4,000,000.[25]

A barter contract for that amount was received through the Commodity Credit Corporation for the 12-month period beginning 1 April 1967. Monthly deposits were split between the Bitburg and London finance offices. The European Office submitted its 1968-1969 barter requirements, amounting to $3,000,000 to OAR effective 1 April 1968.[26]

Barter contracts were received in January 1968 for the year beginning 15 February 1968 in the amount of $3,500,000. Again, that amount was split between the Bitburg and the London Accounting Accounting and Finance Offices. Barter funds totalling $2,800,000 were requested for the year beginning 15 February 1969. That amount was received and, as before, split between the London and Bitburg Finance Offices. Barter funds totalling $1,400,000 were requested for Calendar Year 1970; once again split between the Bitburg and London finance offices.[27]

As of 16 March 1970, $1,000,000 in barter funds were supplied to

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*Like the contracts and grants, barter funds were transferred later to the Bitburg Finance Office when the offices in France were closed.

EOAR under a Commodity Export Barter Contract. The contract ended 16 January 1971 and provided for 12 successive equal monthly payments of $83,333.34. Previously, the barter contract period ended on 6 December 1969, but $400,000 was carried over and used to extend the EOAR barter coverage until 15 March 1970.[28]

Devaluation of Currency

On 18 November 1967, the United Kingdom (UK), Ireland, Israel, Spain, and Denmark devalued their currencies by approximately 14.2 percent. Finland had devalued prior to that time. Immediate steps were taken by the Procurement Directorate to prevent windfalls to the contractors/grantees in those countries.[29]

The United Kingdom, Ireland, and Israel contained the majority of the EOAR contracts and grants that were affected by the devaluation. Payments were made in those countries in indigenous currencies. The accounting and finance offices concerned were instructed to pay 14.2 percent less than the dollar amounts* stated in the contracts/grants.[30]

The contractors and grantees were informed of the EOAR policy of continuing payments in the same amounts of local currencies as those contemplated at the time of negotiation. Adjustments, on a case-by-case basis, would be made where inequities occurred. It was recognized that expenses involving purchases in the United States would

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*This prerogative could be taken by the contracting officers because the contracts/grants contained a clause permitting adjustments in the payments under such circumstances.

represent more UK pounds sterling or Israeli pounds than formerly. On the other hand, expenses internal to the devalued country, such as salaries or overhead, were expected to remain about the same as prior to devaluation for the remainder of the contract period. The contracts in Spain, Denmark, and Finland were to be adjusted individually in accordance with the clauses and in consideration of the circumstances in each case. Up through the first two quarters of FY69, contracting officers continued to negotiate additional months of contract/grant coverage for moneys available because of currency devaluation in the countries listed above.[31]

Contracting officers negotiated additional months of contract/grant coverage for dollars "created" by the 12-1/2 percent devaluation of the French franc on 11 August 1969. Those actions were applicable in cases where enough time remained of contract/grant coverage to warrant a recalculation by the contracting officer. Additional research was requested for the contract dollars which had become worth more than at the time of obligation. Such actions were in accordance with a revaluation clause in each EOAR contract and grant which allowed each contracting party protection from unanticipated losses resulting from the revaluation of foreign currency.[32]

Cost Sharing and Reverse Gold Flow

Continual emphasis also was placed on cost sharing and reverse gold flow during the latter half of the 1960s. An attempt was made through the Director Defense Research and Engineering (DDR&E) to

maintain the "gold flow" curtailment for research at the 65-percent level of the FY63 obligations. Of 113 negotiations conducted during the latter half of 1965, cost sharing was obtained in 83 cases (74 percent). Because of the impact of the cutbacks in FY65, it was believed that no further reductions could be made without cutting out projects which were important to the overall research program and arbitrarily cancelling continuous programs before they had reached fruition.[33]

Approval was not given, however, and it was necessary to reduce the FY66 obligations to 50 percent of the FY63 level. The exploratory development program was reduced to 65 percent in FY66 and was further reduced to the 50 percent level in FY67. No cost sharing figures were available for FY66. In FY67, the obligated amount of $3,694,795 was supplemented by an additional $7,081,058 in cost sharing by contractors and grantees.[34]

A significant amount of cost sharing also was obtained in FY68 obligations. The obligated amount of $8,057,651 was supplemented by $7,114,596 in cost sharing by the contractors. In FY69, the obligated amount of $2,535,599 was supplemented by an additional $5,055,705 in cost sharing by the contractors and grantees. An obligated amount of $1,615,450 was supplemented by an additional $3,516,635 in cost sharing by contractors and grantees in FY70.[35]

More New Theaters of Operation

During the late 1960s, EOAR continued to expand its activities geographically into the other new areas. EOAR representatives visited

South Africa from 24 July to 1 August 1966. Research contracts were negotiated with the Hermanus Magnetic Observatory and with the University of Basutoland, Bechuanaland Protectorate and Swaziland. Those contracts represented the first USAF research contracts with those areas.[36]

As early as the latter half of 1964, exploratory studies were begun concerning the desirability to extending EOAR activities into Egypt and Yugoslavia. Finally, during the July-December 1966 period, a funded purchase request was received for the support of research in Yugoslavia. This was the first time that EOAR had received funds to support a research effort in that country. At the same time, EOAR also received a funded purchase request for the support of a research contract at the American University of Cairo, Egypt. This was the first research effort to be supported by EOAR in Egypt.[37]

Technical liaison visits by EOAR officials were made to both India and Egypt during the period 26 February to 6 March 1967. Interest in the support of research in India and further research in Egypt had been stimulated by the fact that the Congress indicated a willingness to appropriate excess foreign currencies to the services for such support.[38]

As a result of the contacts made during the February-March visit, an EOAR contingent of officers traveled to India in November 1967 for a 16-day technical visit. The team visited universities, research institutes, and government agencies throughout India. The trip objectives included: an assessment of Indian scientific capabilities;

stimulation of Indian interest in conducting research of mutual interest to India and the USAF; and finally, an explanation of the Special Foreign Currency Program.[39]

During that same period, representatives of EOAR visited the University of Teheran, Iran, to discuss USAF support of work by the Institute of Geophysics on investigations of the ionosphere using transmissions from active satellites. This work established the first association between Iranian scientists and the USAF.[40]

Norwegian Seismic Array (NORSAR) Program

At the beginning of FY68, EOAR was given the procurement responsibility for the installation and operation of the Norwegian Seismic Array (NORSAR) near Oslo, Norway. This project, which complemented a $10-million large aperture seismic array (LASA) installed in Montana, was an Advanced Research Projects Agency (ARPA) sponsored R&D effort directed through HQ Electronic Systems Division (ESD). The LASA was a prototype for an eventual worldwide system to detect underground nuclear explosions and could be a satisfactory means for monitoring underground nuclear test ban treaties.[41]

The program was introduced to EOAR by HQ ESD on 15 August 1967, when the project was still in an elementary planning stage. Moreover, ARPA and ESD proposed to install one subarray of 23 seismometers before the November 1967 snowfall in Norway. The EOAR responded to this urgency by negotiating and awarding a $653,700 contract by 23 September 1967. The original contract later was increased by another $206,500

contract in December 1967 to provide for operation and maintenance of the site. A number of difficult problems arose because of the Norwegian contractor's total inexperience with cost reimbursement contracts and DoD contracting practices.[42]

A series of trips were made by the EOAR commander and key staff members to Oslo and elsewhere in Norway to complete final international arrangements associated with the installation, maintenance, and operation of ARPA's LASA subarray at Lillehammer, Norway. As of 31 December 1967, all diplomatic and legal aspects of this special project were met. The project itself, however, proceeded with difficulty as winter conditions hampered installation efforts.[43]

During the preliminary negotiations involving the installation of the LASA program in Norway, the EOAR Judge Advocate was requested by the U.S. Embassy in Oslo to review the proposed Country-to-Country Agreement being negotiated by Norway and the United States for the installation of the program. The EOAR Judge Advocate's analysis of the agreement brought out the fact that the agreement was defective insofar as the tax clauses were concerned. If executed in the manner of the proposed text, it would have cost the United States Government over $750,000 in taxes. This analysis was sustained upon review by State and Defense lawyers and after one month of further negotiations with the Norwegians, the Country-to-Country Agreement was changed in accordance with the proposed clauses of the EOAR Judge Advocate.[44]

The Phase I installation contract was negotiated during the fall of 1967 and awarded on 12 October 1967. It involved the installation

of one subarray of seismometers to accumulate data which would contribute to the design and installation of a LASA system during the summers of 1968 and 1969. The contract totalling $860,200, had a projected completion date of September 1968.[45]

In June 1968, EOAR concluded a $3,995,200 award for the large Phase II array installation. That contract provided for the installation of 21 additional subarray sites in a concentric ring, with a 50 kilometer radius, located around Lillehammer, Norway. In that procurement action, effective price negotiations with the Norwegian contractor resulted in significant savings to the United States Government of $1,282,200.[46]

EOAR also was assigned the administration responsibility for the contracts and provided frequent on-site supervision through the completion of the installation phase two years later. A $700,000 follow-on procurement for a Data Processing Center was programmed for the first quarter of FY69, and yearly operation and maintenance procurement were estimated for the length of the project.[47]

A modification to the Phase II contract in the amount of $642,900 was awarded on 4 December 1968 to provide for the installation and operation of the Data Processing Center at Kjeller, Norway, bringing the total contract amount to $4,638,100. Directorate of Procurement price negotiations with the contractor for those awards resulted in reductions of $1.35 million from the contractor's proposals, representing significant savings to the U.S. Government. The management of that property account also was the responsibility of the EOAR Directorate of Procurement.[48]

Contract administration accelerated during the first six months of 1969 in preparation for the installation of the entire large seismic array and the computer center during the summer of 1969. During the January-June 1969 time period, Procurement reviewed and initially negotiated three follow-on proposals which would carry the NORSAR project through June 1972. These three proposals totalled $39 million, and were finally placed on definitive contract by EOAR in FY70.[49]

Although Headquarters Electronic Systems Division was notified by EOAR that the procurement function for NORSAR must be transferred by 1 March 1970 as a result of the phase-out of EOAR's Procurement Office, by 31 December 1969 ESD had not named an organization to assume this task. During the January-June 1970 period, however, EOAR finally effected an orderly transfer of the procurement responsibility for NORSAR Phase II. After considerable coordination among EOAR, OAR, AFSC, and the Air Force Logistics Command (AFLC), it was determined that primary procurement responsibility would be transferred to ESD of the Air Force Systems Command. The ESD, in turn, recommended that AFLC Detachment #11 at Ramstein Air Base, Germany, assume the administrative contracting officer function because of its location. The AFLC agreed, and on 9 March 1970 the files were transferred to AFLC Detachment #11 at Ramstein Air Base.[50]

Notes

1. Historical Report of the European Office of Aerospace Research, Jul-Dec 63, pp 3 and 9. [Hereinafter cited as Hist Rept of EOAR.]

2. "Report to General Ostrander Concerning Team Visit to EOAR," 14 Feb 64, prepared by HQ OAR.

3. Ibid.

4. Ibid.

5. Ibid.

6. Ibid.

7. Ibid.

8. Ibid.

9. Ibid.

10. Ibid.

11. Ibid.

12. Ibid.

13. Ibid.

14. Hist Rept of EOAR for the period Jul-Dec 63.

15. Hist Repts of EOAR for the periods Jan-Jun 64, Jul-Dec 64, Jul-Dec 65, Jan-Jun 66, Jul-Dec 66, and Jan-Jun 67.

16. Hist Rept of EOAR, Jul-Dec 68, p 28; Hist Rept of EOAR, Jan-Jun 69, p 1.

17. Hist Rept of EOAR, Jan-Jun 66, p 16; Hist Rept of EOAR, Jul-Dec 66, p 18.

18. Hist Rept of EOAR, Jan-Jun 67, p 19.

19. Hist Rept of EOAR, Jul-Dec 68, pp 24-25; Hist Rept of EOAR, Jan-Jun 69.

20. Hist Rept of EOAR, Jan-Jun 64, p 7.

21. Hist Rept of EOAR, Jul-Dec 65, p 7.

22. Hist Rept of EOAR, Jan-Jun 66, p 16; Hist Rept of EOAR, Jan-Jun 67, pp 19-20.

23. Hist Rept of EOAR, Jan-Jun 70, p 13.

24. Hist Rept of EOAR, Jul-Dec 65, p 7.

25. Hist Rept of EOAR, Jan-Jun 66, p 6.

26. Hist Rept of EOAR, Jan-Jun 67, p 19.

27. Hist Rept of EOAR, Jan-Jun 68, p 14; Hist Rept of EOAR, Jul-Dec 68, p 21; Hist Rept of EOAR, Jan-Jun 69. p 24.

28. Hist Rept of EOAR, Jan-Jun 70, pp 10-11.

29. Hist Rept of EOAR, Jul-Dec 67, p 24.

30. Ibid., pp 24-25.

31. Ibid., p 25; Hist Rept of EOAR, Jul-Dec 68, p 21.

32. Hist Rept of EOAR, Jul-Dec 69, p 19.

33. Hist Rept of EOAR, Jul-Dec 65, p 8; Hist Rept of EOAR, Jul-Dec 69, p 19.

34. Hist Rept of EOAR, Jan-Jun 67, App E; Hist Rept of EOAR, Jan-Jun 68, p 22; Hist Rept of EOAR, Jan-Jun 69, pp 23-24.

35. Hist Rept of EOAR, Jul-Dec 66, pp 8-9.

36. Hist Rept of EOAR, Jul-Dec 64, p 10; Hist Rept of EOAR, Jul-Dec 66, p 10.

37. Hist Rept of EOAR, Jan-Jun 67, p 6.

38. Ibid., p 7.

39. Hist Rept of EOAR, Jul-Dec 68, p 16.

40. Hist Rept of EOAR, Jul-Dec 67, p 22.

41. Ibid., pp 22-23.

42. Ibid., pp 3-4.

43. Ibid., pp 29-30.

44. Hist Rept of EOAR, Jan-Jun 68, p 21.

45. Ibid., pp 21-22.

46. Ibid., p 22.

47. Hist Rept of EOAR, Jul-Dec 68, pp 23-24.

48. Ibid., p 24.

49. Hist Rept of EOAR, Jan-Jun 69, p 27; Hist Rept of EOAR, Jul-Dec 69, pp 19-20.

50. Hist Rept of EOAR, Jan-Jun 70, pp 11-12.

Chapter 4

COLLOCATION OF THE EUROPEAN RESEARCH OFFICES

In the course of the 1960s, questions continued to be raised in regard to the cost of procurement of European research and these, in turn, led to the feasibility of the collocation of the three Services' research offices. In October 1964, as part of a tour of DoD procurement organizations in the European Theater, EOAR received a visit by three staff members of the House Appropriations Subcommittee. In their final report the staff members reported that each of the three military Services had a separate office for the purpose of evaluating proposals from and awarding contracts and grants to European scientists. They also said that in their opinion the work of the three offices was poorly coordinated and suggested a consolidation of the facilities and personnel involved.[1]

As a result of their findings, the House Appropriations Subcommittee called on the DoD to accomplish the consolidation "expeditiously and certainly during fiscal year 1966." The Committee also believed that no grant or contract for scientific research should be awarded to an institution or individual outside of the U.S. except in those instances where a specific requirement of the DoD was involved. In view of the gold flow problem, the Committee said, before any such contract was awarded the DoD should ascertain that the work to be performed either was not being or could not be performed in an American institution.[2]

The findings on contract/grant research efforts in Europe and the recommendations concerning the collocation of all DoD research were conveyed to Dr. Harold Brown, Director of Defense Research and Engineering (DDR&E), who agreed to make a study of the possibility of collocating or consolidating the three Services' European research offices. The study was made by Dr. Edward M. Reilley, Assistant Director, Research and Technology, DDR&E, in connection with an overall study on the consolidation of procurement activities in Europe. As a result of the House Surveys and Inspection Report of February 1965 and concurrently with the DDR&E-directed review, DoD directed a study of certain aspects of procurement activities of the three Services in selected European countries. It was conducted by the DoD Procurement Management Review Group between 26 April and 7 June 1965.[3]

The DDR&E study concluded that research activities in Europe could best be accomplished by locating the research offices of the three Services in one city, preferably the Frankfurt-Wiesbaden area in Germany. It also recommended that the U.S. Army Procurement Center, Frankfurt, be assigned responsibilities for procuring all research in Europe when and if the relocations of the research organizations were carried out as recommended. These DDR&E recommendations were noted and included in the DoD Procurement Management Review Group's analysis.[4]

On 10 September 1965, the EOAR Director of Procurement was provided with a copy of a report prepared by the DoD Procurement Management Survey Team. Colonel Jack L. Deets, EOAR's Commander at that time, was alarmed at what he termed "gross misrepresentations"

concerning EOAR functions contained in the report. He forwarded the report immediately to HQ OAR. Major General Don R. Ostrander, OAR Commander, and his staff prepared an OAR position paper refuting the allegations put forth in the DoD Procurement Management Review Group's report, along with a background review of EOAR's activities and the philosophy behind its establishment and operations.[5]

General Ostrander's recommendation was that the "present organization and location of the three Services' R&D offices in Europe be retained." If, however, some form of consolidation became mandatory, he recommended that the existing offices be simply collocated on a military base (provided sufficient space existed on either the Frankfurt or Wiesbaden military bases), with one Service being designated as DoD executive agent for administrative and support functions only. In view of the comparative sizes of the European research programs, he recommended that the Air Force be named as DoD Executive Agent for the consolidated office, if such a move became a fact.[6]

Apparently, the protest efforts of OAR were effective, for on 13 October 1965 Dr. John S. Foster, Jr., Director of Defense Research and Engineering, sent a memorandum to each of the Services' Assistant Secretaries for Research and Development. Dr. Foster directed that each of the Services appoint a member and an alternate to a joint task force to make a comprehensive study of the many practical problems in the implementation of a plan for the collocation of the three European research offices, and forward the report to him no later than 1 February 1966.[7]

The Task Group met on 30 November 1965 in Washington. The members determined that the basic study could best be conducted by the commanders of the three Services' research offices in Europe, as a Working Group. The European commanders were advised on 9 December 1965 to conduct a joint study and to prepare a report to be submitted to the Task Group in Washington not later than 24 January 1966.[8]

The implementation plan was, among other things, to contain a recommended site for the collocated offices. The Working Group considered Frankfurt, Wiesbaden, London, Brussels, and Munich. Among the most important considerations in arriving at a final decision were those of office space, housing, and immediate access to a major transportation center. While those factors were not, in themselves, sufficient to arrive at a final recommendation, they could operate to preclude a given site from further consideration.[9]

By 20 January 1966, the Working Group had prepared and forwarded a report which recommended "that Brussels be designated the co-location [sic]"* and "that the responsibility for research and development for the three co-located [sic] offices be assigned to EOAR." The Army dissented, however. It recommended collocation at Frankfurt with the procurement responsibility given to the U.S. Army Procurement Center, Frankfurt.[10]

The Task Group in Washington adopted the report as written, following the same voting split as in Europe. The Navy and the Air Force

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*London was second choice. Neither Frankfurt nor any of the others was recommended.

voted for approval of the report with the Army dissenting. The report was approved in like manner by the Service Secretaries and forwarded to Dr. Foster, DDR&E, who accepted the report.[11]

As a consequence of this study, EOAR prepared and executed implementation plans to accept the procurement responsibilities of the Navy Program at Brussels. A detachment of the U.S. Navy Office of Naval Research was physically located with EOAR in Brussels and was staffed by Naval personnel. In addition, EOAR used the scientific liaison services of the Navy in its European program. The Air Force sent two Air Force scientists to work on the Navy scientific staff in London. The Army, however, declined EOAR's offer to collocate with them at Brussels.[12]

The collocation issue lay dormant then until 31 January 1968. At that time the U.S. Ambassador to Belgium, Ridgway B. Knight, announced his intention to cut the EOAR civilian and military staffs in response to the President's 18 January 1968 bulletin for correcting the adverse U.S. balance of payments problem. A reclama was submitted to the Ambassador on 6 February following a staff study. Guidance from OAR headquarters directed the EOAR commander to recommend a 10-percent cut across the entire staff if a cut was ultimately directed. Although this position was conveyed to the Ambassador on 16 February, the plan was not implemented because EOAR was subsequently exempted by the State Department.[13]

The Air Force Chief of Staff sent an all-command message on 21 February with his approach for responding to the President's

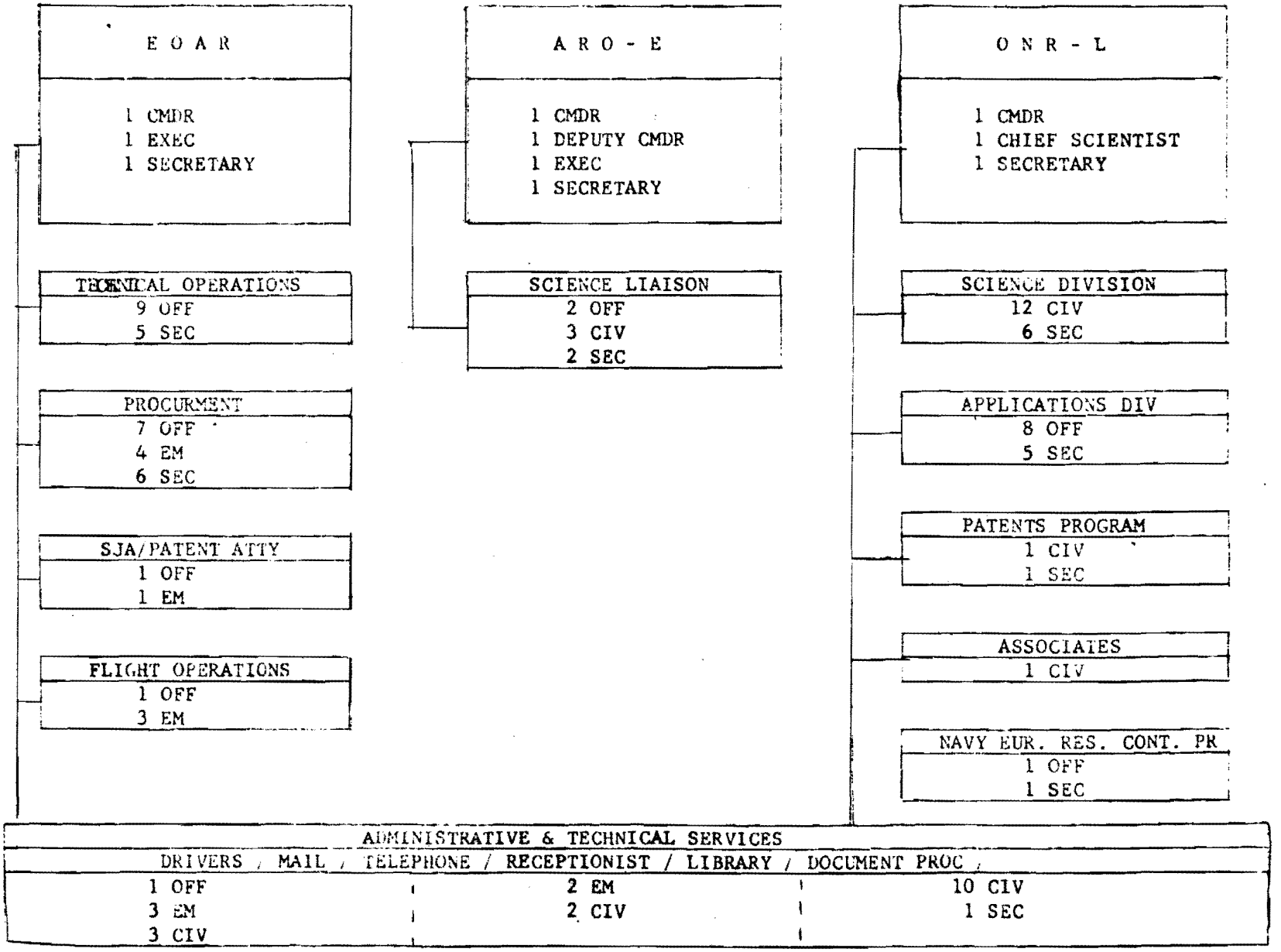
18 January directive. An EOAR staff study to HQ OAR on 1 March presented a plan for reducing EOAR personnel 10 percent by the end of the first quarter FY69, followed by an additional 15-percent reduction that could be accomplished by the fourth quarter FY69, if directed.[14]

On 14 March HQ OAR directed the EOAR commander to submit an alternate report. Using the 1 March 1968 report as a basis for manpower reduction EOAR was to consider, for the first time, the question of collocating the three Services' R&D offices at a common site in Europe. (See Figure 7 for proposed collocation Organization Chart.) Munich and London were compared.[15] After taking into consideration such items as annual operating costs, special housing allowances, cost of living allowances, office space and rent, household goods transportation costs, annual travel costs, schools, commissary, post exchange, hospitals, and housing, Munich was picked over London as having more facilities at a lower cost. A summary of annual operating expenses alone shown below fully supported this choice:[16]

	London	Munich
Basic Allowance Quarters	$ 104,548	$ -0-
Special Housing Allowance	149,903	-0-
Cost of Living Allowance	42,829	-0-
	$ 297,271	
Office Space	$ 161,000	-0-
Travel Expenses	68,295	102,293
Household Goods Transport	240,000	$ 98,400
	$ 766,566	$ 201,193

Figure 7. PROPOSED COLLOCATION ORGANIZATION CHART

DATE: 18 Mar 68



This request was also generated by the instructions of the President in that DoD was to take specific measures to reduce the number of personnel abroad and to eliminate duplicative activities in order to alleviate the current balance of payments problems without further debate. The European research offices of the three Services were to be collocated in London, England, with an accompanying reduction in both military and civilian personnel. In addition, there would be a curtailment of the research and exploratory development efforts assigned to foreign investigators. In 1968 the Director of Defense Research and Engineering requested an implementation plan for the collocation of European R&D offices.[17]

In a series of meetings between members of the DDR&E staff and designated representatives from the three Services, guidelines were worked out. London was selected as the collocation site. The Air Force and the Army were to make arrangements to move their respective offices from their locations in Brussels, Belgium, and Frankfurt, Germany, to London, where they would share office space with the Navy research office. Dr. Foster wanted a final coordinated and phased implementation plan for the relocation by 15 April 1968. The plan was to provide for the implementation to begin prior to or by 1 July 1968 and be completed by 30 June 1969. The professional staffs, and the administrative and clerical staffs would be reduced from the existing levels to a total of 92 for the three offices combined. The proposed breakout was as follows:

Army Research Office - Europe	14
European Office of Aerospace Research	38
Office of Naval Research - London	40

As a minimum, 75 percent of the reduction was to be accomplished by December 1968, and the remaining 25 percent completed before 30 June 1969. Details of staff reductions and revised mission statements commensurate with the reduced level of personnel were to be included in each Service's implementation plan.[18]

In an effort to further diminish the DoD contribution to the imbalance of payments problem, Dr. Foster said it would also be necessary to reduce the research and exploratory development efforts (6.1 and 6.2 funds) assigned to foreign investigators. Dr. Foster introduced some DDR&E program guidance figures for FY69 which he said should be treated as upper limits for future research programs, and that early action should be taken on the part of three Services to make certain that their FY69 programs conformed with DDR&E guidance. (See Figure 8, below).

Figure 8

DDR&E Program Guidance on Combined 6.1 and 6.2
Moneys for Western Europe, Australia, and New Zealand
($ Thousands)

DoD Components	FY68	FY69
Army	$ 850	$ 595
Navy	400	280
Air Force	$ 2,350	$ 1,645
Service Totals:	$ 3,600	$ 2,520

Research and exploratory development projects in the Middle East and Africa, among other areas, also contributed to the balance of payments problem, said Dr. Foster, so it was essential that such projects also be closely scrutinized for justification within the applicable

criteria for foreign research.[19]

On 22 March 1968, the DCS/Research and Development's (USAF) Assistant for Foreign Development inserted himself into the discussions by directing OAR to prepare a coordinated plan, as requested in the 14 March DDR&E memorandum, that would "meet the spirit and intent of this memorandum" and forward it to him by 11 April. It was understood by all concerned that, as a result of directed force reductions, there might be other sites to be considered which would be more suitable and/or cheaper. The OAR was asked to include an analysis of any such possibilities with comparative cost data (between London and the alternates). The plan could include alternative force reductions and alternative dates at which those force reductions would be achieved.[20]

Headquarters OAR responded with a three-part proposal. The first proposal was developed to meet the spirit and intent of the DDR&E memorandum. It provided that EOAR would collocate in London by 1 July 1969 with a staff reduced to 38 persons to administer reduced research and exploratory development programs as specified. Four assumptions underlaid the first plan. They were: (1) that adequate office space would be available in London from 1 July 1968 forward in order to implement the directed, time-phased move, (2) that EOAR would continue to furnish procurement support to ONR-L, (3) that each of the three collocated European research offices would retain its autonomy, and (4) that permissible future funding levels for 6.1 and 6.2 funds would be no lower than the FY69 levels specified in the DDR&E memorandum. While the then current mission of EOAR was to be

retained, the directed staff reduction would necessitate performing scientific and procurement functions for certain Defense Research Science subelements from the U.S.[21]

The second proposal, also dealing in terms of a London collocation, presented an alternative staff reduction to 46 persons which would permit retention of all planned scientific and procurement functions within EOAR. The same time-phased movement plan as applied to the first proposal would also apply to the second, and the stated assumptions of the first proposal would equally apply to the second.[22]

The third proposal presented an alternative collocation. That proposal was based on new information that was not available to the participants of the meetings cited in the DDR&E memorandum.* Under the third proposal, the Commander-in-Chief, U.S. Army, Europe, would make available adequate office space and dependent housing in Munich in the summer of 1968. OAR's analysis of the advantages/disadvantages of both Munich and London indicated that Munich would be preferred over London. It was emphasized that EOAR could perform all functions necessary for mission effectiveness from either site, but it was felt that the availability of government housing in Munich would have a decided beneficial impact on morale. Munich also offered significant cost savings over London from OAR's point of view. The Munich move was considered from both the 38 and 46 personnel plans. In conclusion, the OAR reply requested USAF support for the alternate manning of

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*Reference here is to EOAR's study in response to the 1 March directive already discussed.

46 people rather than 38 by 1 July 1969, and asked for serious consideration for the collocation of the three research offices in Munich.[23]

Meanwhile, during the week of 1 April 1968, Dr. William L. Lehmann of the Office of the Secretary of the Air Force (Research and Development) had met with Dr. Donald M. MacArthur, Deputy Director for Research and Advanced Technology, DDR&E, to discuss the alternate collocation site of Munich for the three Services' European research offices. Dr. MacArthur pointed out that he would not consider Munich unless significant gold flow savings could be proved for a Munich collocation. Dr. Lehmann suggested that DDR&E call the three Services together to arrive at a consensus on the possible gold flow savings of a move to Munich.[24]

A meeting for that purpose was held on 5 April 1968 in the office of Dr. A. A. Dougal, Assistant Director of Research, DDR&E, to discuss potential cost savings if the European research offices were collocated in Munich rather than in London. Dr. Dougal opened the meeting with a discussion on imbalance of payments, recent queries from the Reuss House Subcommittee on Government Operations concerning overseas research, and the DDR&E position on collocating the research offices in London. He stated that DDR&E had determined that London was the most productive base from which to operate the European research program. As to gold flow savings, DDR&E was more interested in getting its dollar's worth than in saving a few dollars by collocating at a less productive site.[25]

The Navy agreed that it could not operate as efficiently from Munich as from London. The Army took the position that because of the small size of the Army Research Office-Europe, it could only save an insignificant amount by moving to Munich. The Air Force response was that the gold flow savings which could be made by moving to Munich were significant enough to warrant further consideration of that location.[26]

The Air Force presented its calculated gold flow savings to the group; these amounted to about $450,000 per year. These savings for collocating in Munich rather than in London were based on cost factors contained in various DoD documents. Even though the Service representatives agreed to the presented gold flow savings, Dr. Dougal considered them hypothetical and out of line. Dr. Dougal still viewed London as having the longest and most successful research operation of the DoD in Europe, and that a move to London of EOAR and ARO-E would be the least disruptive. And despite all arguments to the contrary, he considered Munich unacceptable from a mission effectiveness standpoint.[27]

The Honorable Alexander H. Flax, Assistant Secretary of the Air Force (Research and Development), also forwarded a plan from his office to DDR&E in response to its 14 March 1968 memorandum on the collocation of the European research offices. Because of the difficulties in effecting a 75-percent personnel reduction by the end of CY68, Dr. Flax proposed putting off meeting those reductions until 1 July 1969. He went on to say that the directed reduction of 38 percent in personnel would seriously degrade R&D operations. After

discussing the matter with the DDR&E staff, Dr. Flax requested that the reduction in personnel be held to the 30-percent level which had been levied on the other Services.[28]

On 15 July 1968, Dr. Foster of DDR&E acknowledged Assistant Secretary Flax's proposals in his implementation instructions for collocating the three European research offices and reducing the number of overseas research personnel. He said that Dr. Flax's EOAR relocation plan had been reviewed, but because of the increased severity of the balance of payments problem the DoD had to take additional steps during FY70 to still further reduce the numbers of military and civilian research personnel assigned to Europe and to further curtail the research and exploratory development efforts assigned to foreign performers. Therefore, an initial reduction in personnel was to be effected as soon as possible and by no later than 30 June 1970. After considering the diverse factors presented in support of alternative sites, London was designated as the collocation site.[29]

Dr. Foster went on to say that the general policy of DoD regarding research and exploratory development projects carried out by foreign performers would be guided by the recommendations in the Twenty-Ninth Report by the House Committee on Government Operations which stated that:[30]

> until the balance of payments emergency has ceased, all DOD components shall limit dollar financing of new foreign research projects to those which are urgently needed by the United States, cannot be carried on in the United States by either American or foreign scientists, and will not be financed by foreign countries despite specific efforts by the United States to obtain such alternate financing.

All DoD components would be required to apply those policy guidelines by insuring that all ongoing or future research and exploratory development by foreign performers was supported by DoD only when it was determined that (a) it was clearly significant in meeting urgent defense needs of the U.S., (b) it could not be deferred for later action, (c) the proposed foreign investigator certified that he was unable to obtain support from any other source for the proposed project, and (d) at least one of the following special conditions was inherent in the proposed work:[31]

> (1) The research or development involved geographical, environmental or cultural conditions, fauna, or flora, not found and not feasible to duplicate or simulate within the United States and its territories.
>
> (2) The work involved diseases, epidemiological situations, or availability or clinical material which were not present within the United States.
>
> (3) The work involved a unique research idea highly relevant to DoD needs.

Dr. Foster also offered some revised guidance for the 6.1 (Research) and 6.2 (Exploratory Development) programs that were being executed by foreign investigators for the Air Force. In order to further diminish DoD's contribution to the imbalance of payments problem, Dr. Foster said, it was necessary to further reduce research and exploratory development effort assigned to foreign investigators. He requested that (1) the DDR&E program guidance figures for FY69 and FY70 (see Figure 9, below) be treated as upper limits on the amount of programs which were to be planned for those purposes, and (2) that

early action be taken to make the FY69 and FY70 programs conform with his guidance.[32]

Figure 9

DDR&E Programs Guidance on Combined 6.1 and 6.2 Programs in the Air Force (In thousands of dollars)

	FY69	FY70
Western Europe, Australia, and New Zealand	1645	500
All Other Foreign Nations	1155	800
Total for all Foreign Investigators	$ 2800	$ 1300

Dr. Foster stressed that the relocation should be initiated by USAF as soon as practicable and should be completed no later than 30 June 1970. He desired that the major part of the physical relocation be accomplished by the end of summer 1969 so that EOAR would be operating from London at that time. Dr. Foster wanted a report on USAF's plan for reduction of overseas military and civilian research personnel and its implementation plan for collocation by 1 September 1968.[33]

The 15 July 1968 directive from the DDR&E also provided more stringent acceptance criteria for proposed foreign research, as well as a drastically reduced research budget for Fiscal Years 1969 and 1970. Furthermore, it reduced the authorized EOAR manpower from 64 to 46 by 30 June 1969 and to 21 personnel by the end of FY70. The main purpose behind the directive, of course, was an attempt to curtail adverse balance of payments abroad. Several studies conducted

and reported by EOAR during the first half of 1968 were considered by DDR&E in arriving at what was hoped a solution to the problem.[34]

The Air Staff, in turn, directed that an implementation plan for the collocation move to London be submitted to them by 20 August 1968. A team from HQ OAR visited EOAR during early August 1968 to resolve ways and means of complying with the directive and to write the draft implementation plan. Agreement was reached and the draft plan was staffed at HQ OAR and submitted to the Air Staff as requested.[35]

Based on the implementation plan as well as other studies, an Air Staff plan for the reduction of overseas research personnel and the collocation of the three research offices was submitted to DDR&E in late August. After receiving the Air Staff report, DDR&E forwarded its manpower reduction to HQ OAR on 21 September 1968. The EOAR staff held preliminary meetings with HQ Third Air Force and Naval Activities, United Kingdom, in London during the latter half of 1968 to discuss the support that it would require in London. By the end of December 1968, EOAR had developed a movement plan.[36]

Another aspect of conforming to the EOAR manpower ceilings in London by FY70 required the transfer of the procurement and legal functions back to the United States. In order to coordinate the transfer of these functions, a team of officers from HQ OAR and AFOSR visited EOAR and Third Air Force in London during early December 1968. Support and procurement matters relative to the London move were discussed. Agreement was reached on a plan to terminate contract procurement by EOAR in FY70 and to transfer the function to AFOSR. AFOSR

would provide contract procurement of all FY70 purchase requests in the EOAR area of responsibility. EOAR would provide contract and administration on contracts of previous fiscal years. The EOAR staff devised and published a movement plan on 31 January 1969 for relocating EOAR in London by the end of FY70. The plan provided for placing a token cadre of EOAR personnel in London by the summer of 1969, followed by a final move by 30 June 1970.[37]

On 12 February 1969, based on the uncertainty of the long-term availability of the site in London to which the DDR&E directed relocation, the OAR commander made the decision to delay the movement of any EOAR personnel to London during the summer of 1969. The previous time-table was updated following the settlement of those uncertainties. A revised movement plan was published 5 September 1969 by EOAR. Although the OAR commander later disapproved the "split-operation" approach for reorganizing EOAR, the 5 September 1969 issue of the movement plan remained the official guideline for effecting the move to London as directed by the 15 July 1968 DDR&E memorandum.[38]

Four EOAR staff personnel, headed by the EOAR Chief Scientist, started operations in London on 2 September 1969. Representatives from HQ OAR made a staff visit to EOAR during October 1969 to coordinate transportation and logistic problems associated with the move. The movement of EOAR to London was completed by the 30 June 1970 deadline.[39]

On 20 July 1970, operation of EOAR-Brussels terminated with the

PCS departure of Colonel Burl R. Williams, the EOAR Commander.* Functional command and all remaining operations transferred to EOAR-London on that date, although two offices remained open at Brussels during July and August of 1970 to attend to an orderly phase-down of that facility. Lieutenant Colonel Anthony J. Mione, Permanent Professor at the United States Air Force Academy and Chief Scientist of EOARD, served as Acting Commander until a replacement for Colonel Williams could be identified.[40]

EOAR Reassigned to AFSC

Another new era in EOAR's history opened on 1 July 1970 following its relocation from Brussels to London. Its parent unit, the Office of Aerospace Research, was merged with the Air Force Systems Command. The Headquarters OAR, was inactivated and the various subordinate units were either inactivated or transferred to AFSC. Beginning 1 July 1970, EOAR was one of those units assigned to AFSC.[41]

The July-September 1970 period was a difficult one of transition to a new operation in a new location primarily with new people. The former procurement functions of EOAR were transferred to AFOSR's Director of Procurement on 1 July 1970 as scheduled. AFOSR Procurement, like EOAR, faced a difficult transition period, training new personnel and most difficult of all, setting up procedures to establish an effective procurement office separated by an ocean and a long

*Colonel Burl R. Williams replaced Colonel Jack L. Deets as the EOAR Commander on 18 Jul 68.

communication pipeline from its customers. Contract negotiation trips had to be scheduled far in advanced, and once set were difficult to modify to handle special situations that invariably occurred. The communication links were time-consuming in the case of mail and extremely unpredictable and difficult to complete when using the telephone Autovon.[42]

By the end of October, EOAR had completed the transition and once again was fully operational. (See Figure 10.) New personnel were trained, integrated into EOAR and had established contact with those European scientists in their areas of responsibility. AFOSR procurement personnel initiated the first contract negotiation trip to Europe in October, followed by other trips in November and December.[43]

Foreign Research Strategy Workshop

The years of steadily declining foreign research expenditures coupled with the reduction in the size of EOAR and, finally, the move to London and physical separation of EOAR technical and procurement activities had caused many questions and doubts about the future of foreign research and the EOAR. Perhaps, therefore, the most important single factor in setting the future course of EOAR was the outcome of the Foreign Research Strategy Workshop held at AFOSR, 14-16 October 1970.[44]

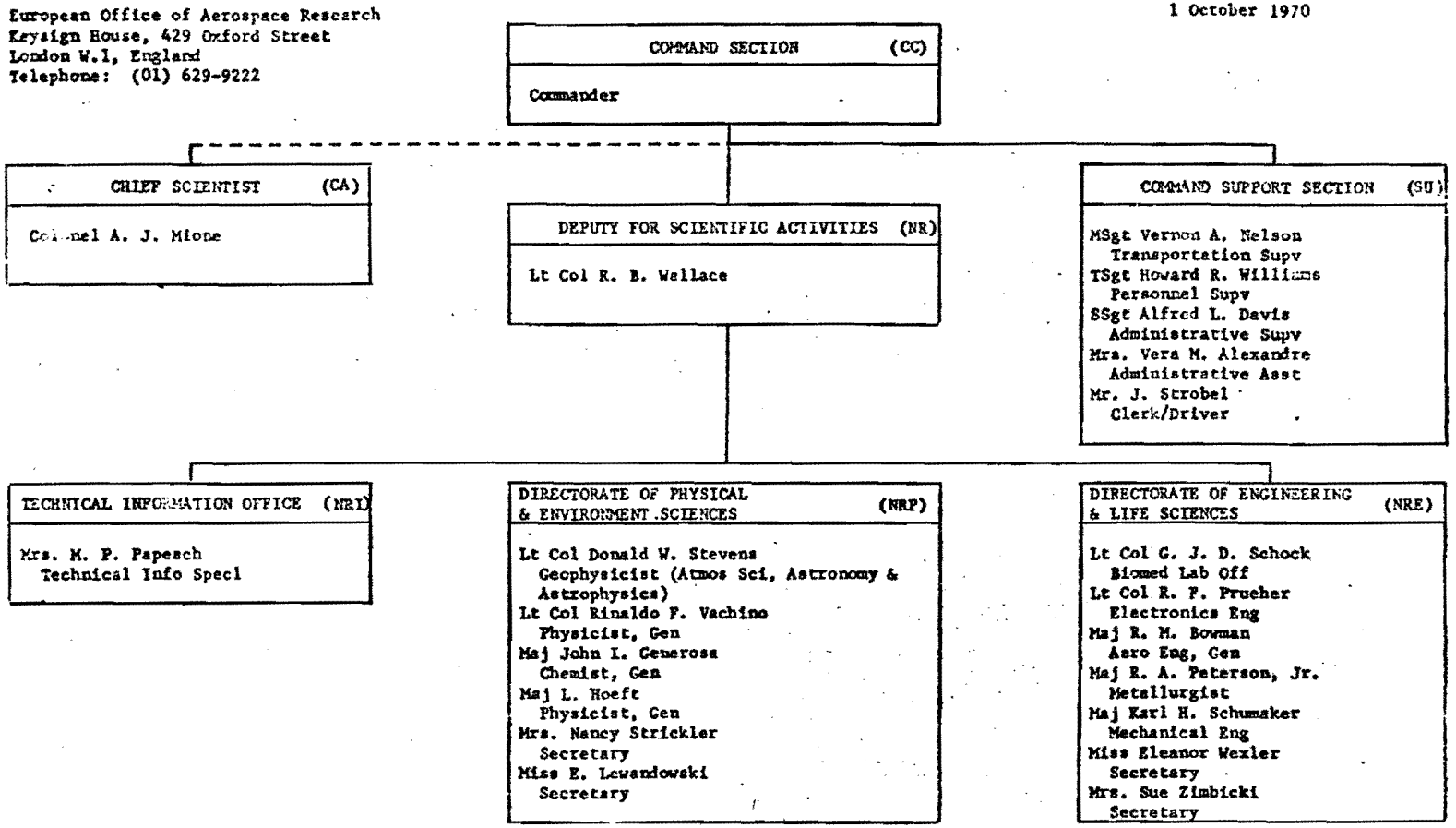
The workshop, under the direction of Major General Paul T. Cooper, Director of Laboratories, AFSC, was charged with the responsibility of examining the USAF approach to sponsorship of foreign research as

Figure 10

EOAR FY 71 ORGANIZATION CHART

European Office of Aerospace Research
Keysign House, 429 Oxford Street
London W.1, England
Telephone: (01) 629-9222

1 October 1970



suggested by analysis of an USAF Scientific Advisory Board report published on 4 May 1970. The participants were divided into Task Groups which, upon completion of their work, made recommendations to the Workshop Executive Committee, headed by Brigadier General W. T. Woodyard, Dean of the Faculty, USAF Academy. These recommendations, solidified in the "Report of the Foreign Research Strategy Workshop," were submitted to Major General Cooper on 21 October 1970. That report, in addition to providing a comprehensive and objective review of USAF foreign research activities, also included implementing actions to carry out the Scientific Advisory Board recommendations. On 25 November 1970, General Cooper forwarded copies of the Foreign Research Strategy Workshop Report to Commander/Directors of the major AFSC laboratories and facilities for review and action.[45]

Other Problem Areas

Other problems included the severe budget and gold flow restrictions, which over a period of several years had the effect of diminishing active contact with the foreign research community. The $1-a-year contract was initiated as a tool to retain those contacts in the face of the declining number of research procurement actions. While successful, in its purpose, the $1-a-year contract still required a commitment of resources by both parties because of the necessary overhead associated with all formal procurement.[46]

Earlier in 1970, EOAR had proposed the establishment of a program wherein the EOAR would execute a semiformal signed agreement with

European scientists and institutions. That agreement would provide means for maintaining scientific contact through the continuing exchange of research reports from leading European scientists in return for U.S. technical reports, Window-on-Science* travel, and other considerations which would not require contractual action on the part of the U.S. Air Force.[47]

On 21 December 1970, General Cooper, AFSC Director of Laboratories, authorized EOAR to initiate and execute this program, called Memorandum of Mutual Objectives (MOMO), with appropriate members of the European scientific community. During the January-June 1971 period, EOAR concentrated on acquainting the laboratories with the new program and solicited laboratory recommendations for MOMO participants. Three MOMOs were initiated during that period: one in France and two in Israel.[48]

Other budget, personnel, and procurement problems surfaced soon after EOAR's move to London and its assignment to AFSC. On 18 September 1970, the Executive Session Report of the AFSC Laboratory Directors Conference requested an update of the impact of the AFSC/OAR merger on former OAR field units. Insofar as EOAR was concerned, the principal problem involved the FY71 budget authorization. The EOAR budget was reduced from $316,000 in FY70 to $182,300 in FY71 to reflect the move from Brussels to London and the attendant decrease in

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*Program whereby distinguished members of the European Research Community are selected and brought to various AFSC laboratories (AFGL being the primary one) to work with and exchange information with American scientists in similar areas.

manning. An initial distribution of $103,000 was allotted to EOAR leaving a shortage of $79,300. Since all of the EOAR funds were budgeted for operating expense, there were no elements of expense that could absorb such a decrease in funds. Proportionate budget reduction applied across AFSC field organizations could not be absorbed by reprogramming actions within EOAR.[49]

Another problem concerned workload and personnel. Since assignment to AFSC, the number of required and requested management reports and staff inquiries quadrupled at the same time that EOAR lost the manning positions of the people who formerly handled such reports. The London office manning was developed originally with the understanding that HQ OAR would handle most of the EOAR report requirements. The inactivation of OAR, of course, changed that. EOAR was not budgeted for such a workload and had to accomplish it at the expense of other important administrative tasks.[50]

The third problem had to do with travel difficulties in the Procurement area. The EOAR contracting function was moved to Washington with the assurance that contracting officers responsible for the foreign research program would make the necessary trips to EOAR. Regulatory controls applicable to regular DoD and AFSC foreign travel were applied to the procurement officers, considerably limiting their travel and usefulness. Thus, EOAR was not receiving close support by procurement personnel during its initial period of readjustment.[51]

The staff of AFSC Directorate of Laboratories looked into these problems and noted that, in most instances, the problems were in the

process of being resolved or soon would be resolved. Insofar as the budget authorization shortage was concerned, the bulk of the funds shortage had been released the day after the EOAR letter was written and the remaining amount was to be released in the third fiscal quarter.[52]

The AFSC agreed that the EOAR workload generated by required responses to AFSC-levied reports and inquiries were indeed excessive. That condition was blamed on the fact that EOAR was being treated as if it were the equivalent of a division, range, center, or laboratory, which was not so. The Director of Laboratories felt that the problem would be greatly reduced, if not solved, if EOAR were removed from Command-wide distribution channels. The most reasonable solution, according to AFSC, was to redesignate EOAR as a detachment of the 6590th Special Activities Squadron, HQ AFSC, with assignment of operational control of EOAR to one of the directorates.[53]

Accordingly, in mid-November 1970, General Cooper recommended redesignating EOAR as a detachment of the 6590th Special Activities Squadron, HQ AFSC, and placing it under the operational control of the AFSC Director of Laboratories. HQ USAF approved that action on 1 July 1971. EOAR was inactivated and Detachment 38, 6590th Special Activities Squadron was activated on the same date.[54]

The majority of the foreign travel problems seemed to have arisen from a misunderstanding of AFSC procedures used to obtain travel clearances. It was felt, at AFSC level, that closer coordination between the applicants, AFOSR in that case, and the Directorate of

Laboratories would solve many of the problems experienced. Changes in AFSC regulations were made which eliminated the necessity for HQ USAF to approve travel associated with international scientific meetings and provided the various laboratory commanders with approval authority for international travel for all but general officer and supergrade personnel.[55]

Notes

1. Historical Report of the European Office of Aerospace Research, Jul-Dec 64, p 8 [hereinafter cited as Hist Rept of EOAR]; House of Representatives, 89th Cong, 1st Sess, Committee on Appropriations, Rept No. 528, "Department of Defense Appropriations Bill, 1966," 17 Jun 65. [Hereinafter cited as H.R. 528.]

2. H.R. 528, 17 Jun 65.

3. Hist Rept of EOAR, Jan-Jun 65, p 8; H.R. 528, 17 Jun 65; Hist Rept of EOAR, Jan-Jun 66, pp 1-2.

4. Hist Rept of EOAR, Jan-Jun 66, p 2.

5. Ibid., p 3; ltr, Col T. M. Love, Actg CofS, OAR, subj: OAR Position Paper on the European Office of Aerospace Research, 14 Sep 65, w/ atch: OAR Position Paper on EOAR.

6. See note above.

7. Hist Rept of EOAR, Jan-Jun 66, p 3; memo, Dr. John S. Foster, Jr., DDR&E, to Asst SEC of the Army, Navy, and Air Force, subj: Research Operations in Europe, 13 Oct 65.

8. Hist Rept of EOAR, Jan-Jun 66, pp 3-4.

9. Ltr, Col C. L. Beaudry, Chmn of Working Gp, to CINC, US Naval Forces, Europe, subj: Co-location of Service Research and Development Offices, 21 Dec 65.

10. Report of the European Research Working Group: A Co-Location Study of the Three European Research Offices, 20 Jan 66.

11. Hist Rept of EOAR, Jan-Jun 66, pp 5-6.

12. Ibid., p 6.

13. Hist Rept of EOAR, Jan-Jun 68; ltr, Col J. L. Deets, Comdr EOAR, to Hon R. B. Knight, US Amb Belg, subj: [reasons for exempting EOAR from Presidential-directed personnel cuts], 6 Feb 68.

14. Hist Rept of EOAR, Jan-Jun 68, pp 7-8.

15. Ibid., p 8.

16. MFR, Lt Col R. F. Mitchell, Exec Off, EOAR, subj: Co-location of European Research Offices, 18 Mar 68, w/4 atch.

17. Memo, Dr. Foster to Asst SECs (R&D) of the Army, Navy, and Air Force, subj: Co-location of European Research Offices, Reduction in Overseas Military and Civilian Research Personnel, and Reduction in Research and Exploratory Development Programs, 14 Mar 68.

18. Ibid.

19. Ibid.

20. Ltr, Col G. B. Munroe, Jr., Asst for Fgn Dev, DCS/R&D, HQ USAF, to OAR/RRG, subj: Co-location of European Research Offices, Reduction in Overseas Military and Civilian Research Personnel, and Reduction in Research and Exploratory Development Programs, 22 Mar 68.

21. Ltr, Col J. C. Dieffenderfer, Vice Comdr OAR, to HQ USAF (AFRFD), subj: Co-location of European Research Offices, Reduction in Overseas Military and Civilian Research Personnel, and Reduction in Research and Exploratory Development Programs, 11 Apr 68.

22. Ibid.

23. Ibid.

24. MFR, Lt Col R. E. Lucas, OAR, subj: Meeting with DDR&E on European Research Office Co-location, 8 Apr 68, w/atch.

25. Ibid.

26. Ibid.

27. Ibid.

28. Memo, Dr. A. H. Flax, Asst SAF(R&D), to DDR&E, subj: Collocation of European Research Offices, 4 May 68.

29. Memo, Dr. Foster to Dr. Flax, subj: Implementation for Colocating the European Research Offices, Revised Policy Criteria and Program Guidance, and Reduction in Overseas Research Personnel, 15 Jul 68.

30. Ibid.

31. Ibid.

32. Ibid.

33. Hist Rept of EOAR, Jul-Dec 68, p 1.

34. Ibid., pp 1-2.

35. Ibid., p 27.

36. Ibid., p 2; Hist Rept of EOAR, Jan-Jun 69, p 1; EOAR Movement Plan, 31 Jan 69.

37. Hist Rept of EOAR, Jan-Jun 69, pp 1-2.

38. Hist Rept of EOAR, Jul-Dec 69, pp 1-2; EOAR Movement Plan, 5 Sep 69.

39. Hist Rept of EOAR, Jan-Jun 70, pp 1-2; HQ USAFE MO-17, 28 Nov 69.

40. Hist Rept of EOAR, Jul-Dec 70, p 1.

41. Ltr, Brig Gen T. B. Hoxie, Dep Dir/M&O, DCS/Pers, HQ USAF, to AFSC and OAR, subj: Reassignment and Inactivation of Office of Aerospace Research, 8 Jun 70; AFSC SO G-65, 12 Jun 70.

42. Hist Rept of EOAR, Jul-Dec 70, pp 2-3.

43. Ibid., p 2.

44. Ibid., p 3.

45. Ibid., pp 3-4; ltr, Maj Gen Paul T. Cooper, Dir of Labs, Hq AFSC, to all AFSC Labs, subj: Foreign Research Strategy Workshop, 25 Nov 70.

46. Hist Rept of EOAR, Jul-Dec 70, pp 4-5.

47. Ibid., p 5.

48. Ibid., p 5; Hist Rept of EOAR, Jan-Jun 71, p 1; ltr, Maj Gen Cooper to EOAR/CC [Comdr], subj: Memorandum of Mutual Objectives, 2 Dec 70.

49. Ltr, Col A. J. Mione, Actg Comdr EOAR, to HQ AFSC (DL) [Dir of Labs], subj: Impact of AFSC/OAR Merger on EOAR, 7 Oct 70.

50. Ibid.

51. Ibid.

52. Ibid.

53. Ibid.

54. Ltr, Maj Gen Cooper to AFSC/DO [DCS/Ops], subj: Redesignation of European Office of Aerospace Research as a Detachment, 13 Nov 70; ltr, Brig Gen A. D. Slay, DCS/Ops, Hq AFSC, to Maj Gen Cooper, subj: Redesignation of European Office of Aerospace Research as a Detachment, 4 Dec 70; AFSC SO G-86, 28 Jun 71.

55. Ltr, Col Mione to HQ AFSC (DL), subj: Impact of AFSC/OAR Merger on EOAR, 7 Oct 70.

Chapter 5

NEW DIRECTIONS IN THE SEVENTIES

Beginning with the movement of the European Office to London in 1970, there was a mounting concern at various levels of management that EOAR operations might be due for some revamping in the light of changing missions and emphasis in the research and development area. In fact, as early as May 1970, the USAF Scientific Advisory Board (SAB) Ad Hoc Committee on Air Force Sponsored Foreign Research submitted a report expressing concern that the Air Force was losing contact with the European scientific community. The October 1970 Foreign Research Strategy Workshop was held, in part, to seek innovative ways to implement the recommendations of the SAB report. Besides the mechanisms already discussed -- the $1-per-year contracts, "Memorandums of Mutual Objective", and no-cost grants (equipment only) -- an EOAR Commander's Fund ($10,000 per year) was authorized. It was in response to a SAB recommendation to provide EOAR with a quick response capability to satisfy known requirements of the AFSC laboratories. This became known as the "Low Cost Contract and Grant Program." Grants under this program were in the $500-to-$1000 range. It eventually replaced the $1-per-year contracts, the MOMO's, and pratically all of the no-cost grants.[1]

Although EOAR elicited proposals from the various European universities, their technical evaluation, selection for funding, and eventual sponsorship were the responsibility of the AFSC laboratories. Any evaluation, therefore, of the scientific content of the European

program as to its quality, relevance, and accomplishments, whether it be good, marginal, or bad was not so much a reflection on EOAR as it was on the sponsoring laboratory. Furthermore, the complete significance on those projects could not be appreciated by isolated evaluation; they had to be considered in relation to the sponsoring laboratory's complete program in the same area. If contributions from EOAR over a broader range of R&D activities were desired, then its efforts would need to be refocused.[2]

Starting in late 1971 and continuing on into mid-1972, Lieutenant General Otto J. Glasser, DCS/Research and Development (USAF) expressed concern over the operation of EOAR. He considered the maintenance of an effective liaison with the R&D communities of the European allies as of major importance. What he questioned, in that respect, were the methods used to carry out an effective liaison. He felt that the fixed location concept (London) was satisfactory for basic research, but led to organization by scientific specialty.[3]

It appeared to General Glasser that EOAR should consider streamlining its R&D liaison operations in Europe. First, the R&D environment had changed on the Continent since EOAR was established. Those nations were now capable of developing a first-rate weapons technology. Second, there also had been a shifting of the R&D activities within the Air Force. And, finally, the manpower-budget squeeze pointed toward increasing the efficiency of R&D operations.[4]

In response to General Glasser's comments, Lieutenant General Edmund F. O'Connor, AFSC Vice Commander, outlined recommendations to

achieve, within the available resources, a more effective technical liaison with the development communities of Western Europe. He suggested consolidating the resources of the R&D Liaison Offices at London and Bonn (then under Air Staff operational control) with those of EOAR at London into a single agency, European Office of Aerospace Research and Development (EOARD). The new organization would be collocated with the comparable U.S. Army and U.S. Navy agencies in London. That single agency would be tasked to provide both scientific and technical liaison services from the resultant pool of R&D technical officers, on a traveling basis, from the central location in London. The Air Staff resources and functions involving NATO, AGARD, and the SHAPE Technical Center Offices, which were responsive to multinational direction, would be left unaltered.[5]

The mission of EOAR would be broadened to encompass the technical liaison function of identifying potential cooperative efforts involving weapons development technology. That function would be performed by expanding EOAR's visits to European nations to include contacts with both military and industrial development agencies, in addition to contacts with the universities and laboratories. While such recurring contacts might be slightly less personal than the presence of a fixed liaison office in the country, the Air Force representatives in Defense Attache and Military Assistance Advisory Group (MAAG) offices could provide the initial contacts and continuing personal relationships if they were necessary.[6]

The new EOAR (EOARD) would respond to requests from HQ USAF on matters of technical liaison and to AFSC on matters of scientific

activity. The Commander, EOARD, should be sufficiently flexible in the use of his resources to adjust to the varying pressures of research and technological needs. After a trial period, perhaps until the summer of 1973, AFSC should reassess the method of operation, the qualifications of the personnel involved, and the manpower authorizations with a view to achieving resource savings.[7]

Expressing appreciation for General O'Connor's interest in the EOAR program and his proposed plan, General Glasser, nevertheless, expressed continued concern over what he referred to as the EOAR "problem." He was convinced, he said, that while General O'Connor's plan was basically good, it did not go far enough. He expressed the belief that there were "gold mines to be tapped in Europe, but we are not geared to exploit them." He believed the best approach might be for General O'Connor; Dr. Alan M. Lovelace, AFSC Director of Science and Technology; Major General William J. Evans, Assistant Deputy Chief of Staff/Research and Development at Air Force Headquarters; Dr. Grant L. Hansen, Assistant Secretary of the Air Force (Research and Development); and himself to get together and discuss the matter thoroughly. In the meantime, General O'Connor's proposal would be held in abeyance.[8]

The proposed meeting was held in mid-December 1972. Everything from the mission of EOAR, how best to take advantage of European technology, selection of personnel assigned to EOAR, to proposed changes in EOAR organization were discussed. General O'Connor and Dr. Lovelace conducted further discussions along those lines in January 1973.[9]

General O'Connor, AFSC Vice Commander, notified General Glasser at USAF/R&D that AFSC was looking in the direction suggested and had developed a new approach relative to Air Force research and development efforts in Europe, Africa, and the Middle East. To increase the returns from those efforts, AFSC had prepared a plan for implementing some changes to the European Office of Aerospace Research. The reorganized office, which was to be renamed the European Office of Aerospace Research and Development (EOARD), would provide AFSC with a much greater capability to exploit the entire spectrum of R&D from basic research through exploratory and advanced development and into manufacturing technology areas.[10]

By means of such a reorganization, AFSC would retain its current capability in basic research while increasing its efforts in the development and manufacturing technology areas. AFSC planned to accomplish this by expanding the mission of the EOAR and changing the personnel mix to include development and manufacturing technology in addition to unique and important research; to provide increased liaison with members of the scientific and engineering community in the Near East and Africa, as well as Europe; and to encourage more open communications between Air Force scientists and engineers in those areas. The new plan would be placed in effect with the assignment of the new commander, Colonel Robert V. Hemm, in May 1973.* The other personnel changes would follow soon thereafter.[11]

*Colonel Hemm actually assumed command on 1 July 1973.

Colonel Gordon E. Danforth, EOAR's Commander,* concurred with AFSC's proposed plan for EOARD. There were two related aspects of implementation and operation, however, which he believed would prove to be major problems. The first was to provide EOARD with knowledge of both U.S. development requirements and foreign development capabilities in sufficient technical depth to allow identification of items and areas of significance; and, second, to provide EOARD with information about both U.S. and foreign "protective" systems, whether they were military security or industrial proprietary rights. The latter could become greatly aggravated by a growing attitude based on the European Community as a highly competitive economic entity which would be more than willing to "sell American" but only if assured of appropriate economic gain -- hence, potentially, a lot less "sharing" except upon direct purchase.[12]

It would take a lot of effort, Colonel Danforth suggested, to improve the situation. He admitted that the second part of the problem would be mostly EOARD's -- knowing foreign capabilities. Close work with Attaches and MAAGs and Foreign Technology Division (FTD) detachments would help, he said. But he believed that personal recognition, persistence, and some help from high-level official visits by Secretary of the Air Force (Research and Development) (SAFRD), Office of the Secretary of Defense (OSD), key general officers, etc., would also be needed.[13]

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*Colonel Gordon E. Danforth had assumed command on 10 October 1971 relieving Lt Col Richard B. Wallace who was Acting EOAR Commander for four months after Colonel Mione departed on 10 June 1971.

A far more difficult problem, Colonel Danforth reminded AFSC, would be the breaching of the barriers imposed on both sides of the Atlantic Ocean by the DoD, the various Ministries of Defense (MODs), and the industries. For example, Colonel Danforth related how one of his project officers returned from visiting the Air Force Avionics Laboratory (AFAL) and reported that each technical document there was presumed to include test and evaluation data which automatically precluded foreign release. Colonel Danforth believed that it was going to be mandatory that the United States make the first move in lowering the NOFORN (No Foreign Nationals) barriers if EOARD was to try for joint developments. On the other hand, Colonel Danforth continued, EOARD personnel had the requisite security clearances to know Air Force needs and might be able to shop around to seek potential solutions to Europe. The rest of the problem then became one of Europeans' recognizing the United States as a potential buyer of technology and/or equipment.[14]

On 2 May 1973 Major General William J. Evans, Assistant DCS/ Research and Development, Headquarters USAF, informed General O'Connor that although his redirection of the EOAR mission did not address the more basic issue of the value of EOAR/EOARD to the Air Force, it did reflect Air Force recognition of the need to exploit more fully those development efforts underway in Europe. To that extent, General Evans considered General O'Connor's actions as a positive step toward an increased vitality of the USAF International Cooperative Research and Development Program.[15]

It was General Evans' belief that effective exploitation of

European development efforts, together with gaining the requisite trust of European scientists, required a continuing high-level Air Force to Air Force contact. To this end, he personally selected officers he considered to have outstanding requirements as the USAF R&D Liaison Officer, London, and the assistant USAF Liaison Officer in Bonn.[16]

He noted that USAF/AFSC approaches to exploiting European R&D might be complementary where each could contribute to the overall success of the USAF International R&D Program. However, he added, both organizations must insure that their efforts were compatible from the outset. To that end, he requested a clarifying briefing at an early date, outlining the modus operandi for the expanded group, the proposed interface with the liaison offices, and the increased interaction with the laboratory organizations. The requested briefing was held at the beginning of June.[17]

General O'Connor discussed General Evans' comments with Dr. Alan M. Lovelace. Replying for AFSC, Dr. Lovelace said the AFSC staff believed that the personnel actions which General Evans was taking in Europe could only strengthen overall USAF/AFSC efforts to take full advantage of the technology and development efforts underway in that important area of the world. Dr. Lovelace and General O'Connor also agreed that the functions of EOARD and General Evans' USAF R&D Liaison Office could and should be complementary. Continued coordination and collaboration among USAF/AFSC representatives was essential, Dr. Lovelace said.[18]

Dr. Lovelace reminded General Evans, however, that the day-to-day activities of those personnel would vary to a large degree because of

differences in the mission responsibilities of the two organizations. As an example, AFSC had a number of important Command interests and pursuits in these countries which had to be exploited. Although USAF's direct interest and support of those pursuits might be minimal, the full product and success of these ventures would ultimately benefit the entire Air Force.[19]

The various details of the proposed reorganization began to fall into place after the various USAF/AFSC briefings. Then on 1 August 1973, EOAR was redesignated Detachment 38, HQ AFSC (EOARD) and assumed responsibility for coverage of the entire R&D spectrum. It was recognized from the start, however, that the primary opportunities for technology transfer were in the 6.1, 6.2, and technology-oriented portions of 6.3 areas. Only limited exchanges on systems hardware technology could be expected because of proprietary and national interests. Nevertheless, opportunities in the systems technology areas would be actively pursued. The European Office of Aerospace Research and Development adopted as its overall objective the support of all laboratory, center, and division programs by identifying foreign technological advances and capabilities and making them available to the Air Force R&D program. Major effort was placed on developing and strengthening contacts in the development laboratories and in developing new and expanded contacts in European defense and industry R&D organizations. University contacts were oriented more to the Engineering departments.[20]

Despite the new scope of EOARD's operations, and its early progress, the issues of its structure, manning, funding, and even its very

existence were still being questioned. Assistant Secretary of the Air Force for R&D, Walter B. LaBerge, visiting EOARD on 31 May 1974, questioned the continued necessity for one European liaison office for each Service. In addition, the Joint Deputies for Laboratories Committee (JDLC) was investigating improved interdependency among the three Services' 6.1 programs to include possible restructuring of the European liaison offices. A subpanel chaired by Dr. William L. Lehmann of AFOSR conducted the investigation. Finally, while the Laboratory Utilization Study being conducted by Major General Kenneth R. Chapman did not directly discuss the liaison offices, implementing the study's recommendations would certainly influence the future role and mode of operation of EOARD.[21]

As a result, AFSC decided to conduct an evaluation of the effectiveness and contribution of EOARD to the Air Force R&D effort. Because of the AFSC field units' past and present experience with EOARD, Brigadier General Gerald K. Hendricks, Director of Science and Technology in AFSC Headquarters, believed that the staffs and members of those organizations probably had opinions on the value of EOARD both from the point of view of its function of making the results of foreign R&D available to AFSC organizations, and helping them take advantage of those capabilities and accomplishments. General Hendricks cautioned the field units to bear in mind the objective and mission of EOARD and direct their thinking accordingly.[22]

He requested the laboratories, centers, and divisions to provide AFSC Headquarters, by no later than 29 August 1974, their detailed

assessments of the support provided to their organizations by EOARD. Their assessments should contain, but not be limited to, discussions concerning the following areas:[23]

a. R&D liaison and technical reporting
b. Elicitation of foreign proposals to perform R&D in respective areas of interest
c. Support of European contracts and grants
d. Foreign travel
e. Special EOARD programs:
   (1) Window-on-Science
   (2) EOARD low-cost contract/grant
f. Effect EOARD had on the organization's R&D efforts
g. Impact on organization's R&D program if EOARD support would be withdrawn.

As expected by General Hendricks, the divisions (Aeronautical Systems Division, Electronic Systems Division, Foreign Technology Division, and Space and Missile System Organization) responded rather low key. Their responses indicated that at that time EOARD had very little, if any, effect on their organizations and correspondingly that there would be no impact on their organizations if EOARD support were to be withdrawn. More than half (7 of 13) of the laboratories* which responded to the request, indicated there would be an impact on their organization if EOARD support were withdrawn. Of those that did not respond, the Frank J. Seiler Research Laboratory did not have extensive outside programs, and the Air Force Avionics Laboratory had mostly highly-classified programs.

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*Those were Air Force Aero Propulsion Laboratory, Air Force Cambridge Research Laboratories, Air Force Flight Dynamics Laboratory, Air Force Materials Laboratory, Air Force Weapons Laboratory, Aerospace Research Laboratories, and Rome Air Development Center.

Strong support was received from the laboratories which had made responsive use of EOARD's capabilities. One organization which was a strong supporter, the Air Force Armament and Test Center, had not been queried. Another organization, in evaluating the impact of losing EOARD support, hypothesized that other avenues such as AGARD could serve sufficiently as access into Europe. That hypothesis was reflected in that organization's indicating that there would be little or no impact if EOARD support were lost.* In response to specifically identified areas of effort, those services provided by EOARD which appeared to be most beneficial or most understood were the Window-on-Science, R&D Liaison and Technical Reporting, and Foreign Travel Arrangements. The remaining service, contracts and grants, applied primarily to the basic research laboratories. There was, therefore, among the laboratories, a wide variation in the degree of support for an EOARD-type operation.[24]

On 1 July 1974, as a result of HQ USAF pressure on all commands to reduce the size of their respective headquarters, AFSC reassigned some of its many detachments to other AFSC units with similar missions. The European Office, known as Detachment 38, HQ AFSC (EOARD), was reassigned to AFOSR as Detachment 1, AFOSR (EOARD). There was no change in mission and command direction and funding continued to be from the Director of Science and Technology, AFSC.[25]

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*In fact, Advisory Group for Aerospace Research and Development (AGARD) and the other mechanisms such as Data Exchange Agreements did not and could not serve the same functions since they were part-time functions for their technical participants.

General Samuel C. Phillips, AFSC Commander, and his DCS/Development Plans, Brigadier General William W. Dunn, began a series of visits to British defense personnel and installations on 2 September 1974. On 3 September, Dr. Walter B. LaBerge, Assistant Secretary of the Air Force (Research and Development), and Colonel Daniel W. Cheatham, Jr., Director, Air Force Aero Propulsion Laboratory, arrived on separate trips but joined General Phillips and Brigadier General Dunn for discussions concerning the EOARD program. Representatives from the Navy and Army research offices were also present. After the respective missions of the three European R&D liaison offices were described and compared, the subject of the interrelationships and cooperative efforts among the three offices was discussed at some length. The goals of coherent, coordinated technical programs in areas of common interest; complete interchange and joint use of all technical output; and efficient mutual utilization of support manpower, equipment, and facilities were described. The longstanding and recent actions to accomplish those goals were discussed. Unfortunately, Dr. LaBerge, on his previous visit on 31 May 1974, had left with the feeling that there was insufficient interaction. The more detailed reviews of the 2 September meeting were, in part, an attempt to give him a better understanding of EOARD's role in procuring worthwhile European research, and the extent of Tri-Service interaction.[26]

On 15-18 October, an AFSC Director of Science and Technology Staff Team visited EOARD to review and to discuss international research and development activities. It was the opinion of that team

that EOARD was performing its mission, as prescribed by AFSCR 23-57, in a satisfactory manner. There were some discrepancies, but they were not considered of such significance as to materially affect EOARD's overall performance. Colonel Hemm, EOARD Commander, in turn, identified five problem areas of concern to EOARD which he felt required staff assistance.[27]

Those problem areas included the loss of three manpower spaces; the awkwardness resulting from being a detachment of AFOSR but being under the command and management channels of HQ AFSC; a 27-percent reduction in the EOARD travel budget; the need for a better and more positive method of selecting qualified officer personnel; and inadequate AFSC staff support in the sense that many AFSC staff members were not sufficiently familiar with EOARD's mission, methods, and accomplishments to enable them to provide knowledgeable advice.[28]

Neither Headquarters AFSC nor the Director of Science and Technology could really promise EOARD much relief in any of the areas. Insofar as manpower reductions were concerned, AFSC recognized the problems, but the deletion of three spaces from EOARD, as well as the deletion of one manpower space from each of 13 laboratories, was to implement a civilian "career broadening program." There was no possibility, at that time, of providing relief. As to organizational status, effective 1 July 1975 as part of the implementation of the "Chapman Study," EOARD was to come under the operational control of AFOSR.[29]

In the area of travel budgets, AFSC was not optimistic about receiving additional travel dollars and, therefore, EOARD should plan

to live within its present travel dollar budget. As it turned out, relief was later provided. In the matter of personnel, in order to establish EOARD as a Special Duty Assignment, EOARD should submit requests to the Officer Assignment Division, DCS/Personnel—the HQ AFSC office of primary responsibility for AFR 36-20. Requests should include the justification for change and the proposed qualifications required for assignment to EOARD. (This was done and was later rejected by AFSC.) Command Headquarters concurred with EOARD's proposed solution for familiarizing staff members with EOARD's mission, methods, and accomplishments. The Headquarters would, as appropriate:[30]

(1) Encourage and arrange visits to EOARD by pertinent staff members.
(2) Assist EOARD personnel on temporary duty (TDY) to Andrews AFB.
(3) Encourage AFSC staff members to peruse EOARD documents.
(4) Encourage AFSC staff members to discuss EOARD products with other R&D organizations.

Reestablishment of Joint Research Offices at EOARD

Another event of 1974 which had an impact on EOARD was the reestablishment of the European Joint OXRs.* In the spring of 1974 Dr. William L. Lehmann, newly appointed Acting Director of AFOSR, recognized the need for the Directors of Research of the three military Services to reestablish some sort of a formal intersection. Previously, meetings among the Air Force, Navy, and Army were only held at the direction of DDR&E and then usually for some specific purpose.

*Directors of Research (ONR, Navy; OAR, Army; OSR, Air Force), "X" representing the interchangeable factor.

The collocation of the European R&D liaison offices of the Army, Navy, and Air Force in London and the high-level interest in their working interfaces provided the opportunity for the newly-formed European Joint OXR's to assure that the greatest possible degree of mutual support and unity of effort on behalf of the defense research and development program was established and maintained in that geographic area.[31]

Accordingly, in the fall of 1974, Dr. Lehmann arranged a meeting in London of the commanders of the three European offices. With full cognizance of the significant differences in the missions, methods, and priorities of the respective offices, the commanders of the three European R&D liaison offices agreed that the basic elements for coherent, coordinated activity were technical effort, technical reporting, and administrative support.[32]

The OXRs felt that coherent, coordinated technical effort included both planning and execution. Several measures were taken to facilitate close-knit activity. A matrix chart was prepared to indicate the fields of interest and special capabilities of the technical personnel of the three Servives. It was designed to more clearly identify technical counterparts and to better describe the total available professional capability. Another action was the establishment of an information center on planned travel by project officers. Project personnel of all three offices were expected to use it in planning their own R&D liaison travel in order to avoid overlaps and to obtain maximum benefit for all. The primary thrust was for counterpart professionals to plan and carry out their work in as complete and

synergistic a way as possible. That required some knowledge and understanding of the missions and technical interests of the R&D organization of the other Services.[33]

In an October 1974 Interim Report to the Joint Deputies for Laboratories, Dr. Lehmann noted that the three OSR Directors, forming a joint OXR Task Group, visited EOARD in mid-September 1974. Each Director reviewed his own Service office, and together all reviewed the mission, organization, resources, operations, interdependencies and practices of the three offices. They reported that the three offices were or could easily become fully coordinated in the management of their operations. What was needed, the Directors felt, was a joint strategy for their mission assignments. The three offices had both commonalities and differences; commonalities because they were all interacting with European science and technology, and differences because they had their own past histories, their assigned missions, and because their parent Services in the Continental United States (CONUS) were all operated very differently. The three European Office commanders very clearly regarded their jobs as first, to carry out the mission assigned by their Service, and second, to cooperate with their companion Services to the extent that it saved resources and did not interfere with their primary mission. The joint OXR Task Group restricted its investigation to the joint responsibilities of the three Services and did not attempt to assess how well each office carried out the assigned mission of its Service.[34]

The joint OXR Task Group found that the administrative operations of the three European offices were well integrated, and that the European office commanders had recently implemented greater coordination in the planning of operations. There were, in fact, many ad hoc examples of good program coordination. They also felt that the European offices were near the point of diminishing returns to be achieved from further formal coordination. With approximately 30 Project scientists to cover all European science and technology of interest to the three Services, the focus of management attention should be directed toward the selection of the European scientific contacts rather than to the organization of the 30 workers.[35]

It was Dr. Lehmann's belief that the Joint Deputies for Laboratories should review the mission assignments of the European offices to assure that they served the three Services' objectives in priority. Further, he said, the objectives for the European offices should be ascertained in context with the objectives of other DoD activities in Europe, e.g., AGARD, the Bonn office of AF/RD, etc.[36]

The objectives, of course, should be set by the Joint Deputies for Laboratories, he said, and in the following order of priorities:[37]

> a. To maintain Service awareness of science and technology developments in Europe of significant importance to that Service.
>
> b. To foster two-way interchanges of personnel, information, and understanding of science and technology. That should lead to, and should be coordinated with, data exchange agreements, country-to-country agreements, AGARD projects, etc. Mechanisms then being used did not appear adequate.

c. To assure that research and exploratory development activities desired by the Services' CONUS activities were accomplished, with US funding if necessary. That meant meeting the DDR&E criteria for expenditure of funds overseas.

d. To carry out such R&D tasks as might be assigned by their parent Services.

If agreement could be reached upon those objectives, Dr. Lehmann continued, Tri-Service interdependency could be effected in those areas of research and technology that were discipline-oriented, e.g., plasma physics, electronic devices, applied mathematics, etc. Service independence would then concentrate on those technical areas that were either unique or were vitally important to the interests of that Service. The use of OXR principal investigators who were knowledgeable of Service interests should be considered to augment liaison activities that were limited because of manpower shortages. If Tri-Service agreement on mission could be reached in the CONUS, the three European office commanders should then be assigned the responsibility of preparing a plan for the organization of the European offices to implement that assignment.[38]

In his reply, Dr. Walter R. Beam, the Deputy for Advanced Technology of the Office of the Assistant Secretary of the Air Force (R&D), noted that Dr. Lehmann's October Interim Report suggested jointly established objectives for the three European offices. Having observed that the three offices which were originally in other countries had been moved physically together, Dr. Beam said that it would seem that the next and obvious step would be to put all three together under DDR&E management, with a combination of military and nonmilitary

personnel drawn from the three Services and from academia.[39]

Dr. Beam said he was not optimistic about the mechanism by which the European activity was organized and managed, but had always been very enthusiastic about the information which was directed back to U.S. researchers. Notwithstanding the differences in the modus operandi of the three organizations, and some differences in the ways they were managed and measured, it seemed to him that the functions could be performed by a single Tri-Service office. The things which would be of concern if such a proposal were to be made would be: (1) the means for attention to special requirements of a particular service; (2) the effectiveness of communicating results back to at least those who made use of them. He suggested that perhaps some of the problems in arranging technical and personnel interchanges would be eased if the office had a higher level of management visibility. He also wondered about the relative effectiveness of military personnel versus that of academic types in getting information from overseas researchers.[40]

What actually evolved out of the Lehmann/Beam discussions was the consensus that there should be further discussion on the establishment of a joint headquarters policy toward the European Research Offices. Plans called for a meeting of representatives from all three Services in early December 1974 to draft a policy statement on the matter. In its final form the policy statement was expected to be a Memorandum of Agreement (MOA) signed at the Deputy for Laboratories level.[41]

The meeting was held 4 December and from it came a draft MOA embodying the joint research office philosophy of the three Services.

On 8 January 1975, a second meeting was held, at which time the MOA was reworked and also rechristened Memorandum of Understanding (MOU). As there were no major objections to the language of the second draft, it was sent to the three London offices for their comments. It was hoped that it would be coordinated and returned in time for it to be signed at the February 1975 meeting.[42]

It was returned in late January and formally signed by representatives of the three Services on 10 February 1975. The joint Memorandum of Understanding established a Tri-Service European Research Council (ERC) and delineated relationships and responsibilities of the three Service offices to foster coordination and efficiently utilize European research and development results of joint interest. Quarterly meetings were to be called to focus on problems unique to the three Services' research mission and to discuss ways to institute and to expedite future cooperative efforts of the three R&D liaison offices.[43]

On 4 April 1975, a preliminary meeting of the three European R&D liaison office commanders was conducted to prepare an agenda and date for a more formal meeting of the newly-established European Research Council and to discuss miscellaneous on-going actions. The first formal meeting of the ERC was held on 18 April.[44]

On 12 May 1975, Dr. Walter B. LaBerge, Assistant Secretary of the Air Force (Research and Development), wrote General Samuel C. Phillips, AFSC Commander, expressing his recognition of and personal appreciation for the exceptional success the Air Force Systems Command had had in coordinating the Air Force 6.1 and 6/2 research program

efforts with the Army and the Navy. The Memorandum of Understanding which streamlined the jointly located London offices of the three Services, he noted, was "a notable achievement in the advancements made by AFSC."[45]

The question of relocation was not entirely dead either, as evidenced by events in the spring of 1975. In late March, Major General Evan W. Rosencrans, Commander, Third Air Force, suggested that EOARD move into quarters that were available at High Wycombe Air Station. The Navy and Army research offices were not included in the offer, so such a plan would have voided the concept of collocation. With the money situation tight and apparently getting tighter in the future, he felt it might be possible to save a considerable amount of money while providing facilities similar to those then in use by EOARD. He admitted he was "not intimately familiar with the specific requirements relating to location for EOARD," however, he went on, a possible savings of several hundred thousand dollars a year was certainly worth a review and evaluation. The EOARD Commander pointed out the total inadequacy of the proposed location in relation to EOAR's needs and AFSC supported EOARD's position and General Rosencrans quietly dropped the matter.[46]

Thus, on 1 July 1975, when EOARD was placed under the direct operational control of AFOSR, as determined by HQ AFSC in December 1974 under the Laboratory Reorganization Plan, EOARD was well on its way in the direction that Colonel Hemm had been guiding it since his assumption of command in July 1973. That direction was more toward the

development area, but still pursuing basic research areas to the greatest possible extent. At the time Colonel Hemm assumed command, most of EOARD's personnel were engineers and had come from development laboratories. Therefore, it was not necessary to make any drastic reassignments; it was merely a matter of reorienting the personnel to the more applied R&D. Along with that, EOARD began concentrating its efforts on the engineering rather than on the scientific departments of the universities. There was also more concentration on defense and industry laboratories in Europe as well as expanded contacts with the Air Force development laboratories and divisions.*[47]

Beginning in 1973, as replacements were needed, Colonel Hemm emphasized getting personnel from the development laboratories. Thus, the orientation of EOARD's mission consequently began to move more toward engineering and technology and less toward science where the European Office's emphasis had primarily been since its inception in 1952. Under his guidance, a great deal of progress also was made in the areas of improved R&D liaison reports, improved feedback from the Window-on-Science program, semiannual R&D liaison officer reports, intensified response to R&D organizations, intensified inter-Service activity, and country technology assessments.[48]

In summary, it was Colonel Hemm's aim to try to improve communications with R&D management (AFSC), Air Staff, and laboratory managers so that everyone understood what EOARD was doing. By July 1975, he

*Two examples of those expansion efforts were the Space and Missile Systems Organization (SAMSO) and the Aeronautical Systems Division (ASD). The EOARD had had little or no previous contacts with either of them.

had made impressive progress in that direction and EOARD was well on its way toward major accomplishments in both the development and basic research areas. With the assignment of EOARD to AFOSR, AFOSR's mission was expanded well beyond basic research into all the areas covered by EOARD in support of the AFSC laboratories, centers, and divisions.

Notes

1. Ltr, Brig Gen C. H. Bolender, Dep Dir, Dev & Acquis, DCS/R&D, HQ USAF, to AF/RD (Lt Gen Otto J. Glasser), subj: European Office of Aerospace Research (EOARD), 5 Jan 72, w/2 atch.

2. Ibid.

3. Ltr, Lt Gen Otto J. Glasser, DCS/R&D, HQ USAF, to Lt Gen Edmond F. O'Connor, Vice Comdr AFSC, subj: Liaison Functions in the United Kingdom, 2 Jun 72.

4. Ibid.

5. Ltr, Lt Gen O'Connor to HQ USAF/RD, subj: Liaison Functions in the United Kingdom, 6 Sep 72.

6. Ibid.

7. Ibid.

8. Ltr, Lt Gen Glasser to Lt Gen O'Connor, subj: [concern for EOARD], 11 Sep 72.

9. Memo, Lt Gen O'Connor to Dr. A. Lovelace, Dir of Labs, Hq AFSC, subj: [proposed changes in EOARD], 26 Dec 72.

10. Ltr, Lt Gen O'Connor to HQ USAF/R&D, subj: European Office of Aerospace Research and Development (EOARD), 10 Apr 73.

11. Ibid.

12. Ltr, Col G. E. Danforth, Comdr EOARD, to HQ AFSC/DL [Dir S&T], subj: Comments on AFSC Plan for EOARD, 18 Apr 73.

13. Ibid.

14. Ibid.

15. Ltr, Maj Gen William J. Evans, Asst DCS/R&D, HQ USAF, to Lt Gen O'Connor, subj: European Office of Aerospace Research and Development (EOARD), 2 May 73.

16. Ibid.

17. Ibid.

18. Ltr, Dr. A. M. Lovelace, Dir S&T, Hq AFSC, to Maj Gen Evans, subj: European Office of Aerospace Research and Development (EOARD), 16 May 73.

19. Ibid.

20. Interview, Mr. R. F. Phillips, AFSC Hist, w/Col R. V. Hemm, Comdr EOARD, 25 Apr 77; AFSC SO G-80, 30 Jul 73.

21. AFSC/DLC Information Summary of EOARD, 23 Aug 74.

22. Ltr, Brig Gen Gerald K. Hendricks, Dir S&T, Hq AFSC, to All AFOSR Field Organizations, subj: Foreign Research and Development, 19 Aug 74.

23. Ibid.; interview, Mr. Phillips w/Col Hemm, 25 Apr 77.

24. Ltr, Brig Gen Hendricks to All AFOSR Field Organizations, subj: Foreign Research and Development, 19 Aug 74.

25. MFR, Col R. K. Kahler, Ch, Sci & Liais Div, Dir of S&T, Hq AFSC, to Col J. E. Brooke, Dir S&T, Hq AFSC, subj: Foreign Research and Development - EOARD, 20 Sep 74; interview, Mr. Phillips w/Col Hemm, 25 Apr 77.

26. Ltr, Col Hemm to Brig Gen Hendricks, subj: Important Visitors to EOARD, 19 Sep 74, w/2 atch.

27. Rept, Col Kahler to Dir S&T, Hq AFSC, subj: Staff Visit Report, 24 Oct 74, w/1 atch.

28. Ibid.; ltr, Col P. H. Caulfield, Dir, Lab Plans & Progs, Dir S&T, Hq AFSC, to EOARD/CC, subj: Staff Visit Reports, 10 Dec 74; interview, Mr. Phillips w/Col Hemm, 25 Apr 77.

29. See note above.

30. See note above.

31. Interview, Mr. Phillips w/Dr. William L. Lehmann, Dir AFOSR, 15 Feb 77; interview, Mr. Phillips w/Col Hemm, 25 Apr 77.

32. See note above.

33. Ltr, Col Hemm to all EOARD Staff Offices, subj: Interrelationships of EOARD, ONRL, and ERO, 8 Oct 74.

34. Draft Interim Report to the Joint Deputies for Laboratories, subj: European Offices, 11 Oct 74, prepared by Dr. Lehmann.

35. Ibid.

36. Ibid.

37. Ibid.

38. Ibid.

39. Ltr, Dr. W. R. Beam, Dep for Adv Tech, Asst SAF(R&D), to Dr. Lehmann, subj: [discussion of 11 Oct 74 Interim Report], 17 Oct 74.

40. Ibid.

41. MFR, Col Kahler, subj: Joint Air Force-Army European Research Office, 22 Nov 74.

42. Ltr, Col R. B. Kalisch, Dep Dir AFOSR, to Reps of AMC, Army, Navy, HQ USAF, and AFSC, subj: Draft of European Office Memorandum of Agreement (MOA), 18 Dec 74; ltr, Col Kalisch to Reps of AMC, Army, Navy, HQ USAF, and AFSC, subj: Coordination Draft of European Office Memorandum of Understanding (MOU), 10 Jan 75.

43. Ltr, Dr. Lehmann to Reps of AMC, Army, Navy, HQ USAF, and AFSC, subj: Draft of European Office Memorandum of Agreement (MOA), 30 Jan 75; Memorandum of Understanding (ARO-Durham, ONR, and AFOSR), 10 Feb 75.

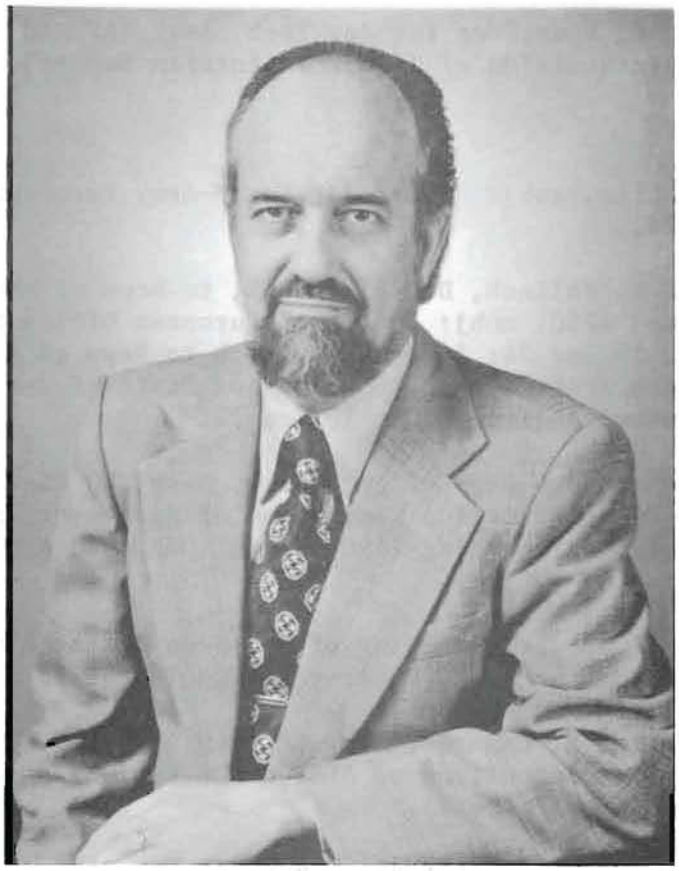
44. Rept, subj: Quarterly Meeting of European Research Council (ERC), 7 May 75, by Dept of the Army, US Army R&D Gp (Europe).

45. Ltr, Dr. Walter B. LaBerge, Asst SAF(R&D), to Gen S. C. Phillips, Comdr AFSC, subj: [recognition of AFSC contributions evident in European Office MOU], 17 Apr 75.

46. Ltr, Maj Gen E. W. Rosencrans, Comdr 3AF, to 7500 ABS, subj: Relocation of USAF European Aerospace Research (EOAR), 24 Mar 75; ltr, Col Hemm to Dr. Lehmann, subj: USAFE Suggestion for Relocation of EOARD, 18 Apr 75; ltr, Maj Gen Rosencrans to CINCUSAFE/DE, subj: Location of the European Office of Aerospace Research and Development (EOARD), 21 Apr 75; ltr, Col Hemm to Maj Gen Rosencrans, subj: Location of the European Office of Aerospace Research (EOARD), 17 Apr 75, w/atchs; interview, Mr. Phillips w/Col Hemm, 28 Apr 77.

47. Interview, Mr. Phillips w/Col Hemm, 28 Apr 77.

48. Ibid.



BIOGRAPHICAL SKETCH

Robert F. Phillips, born 3 November 1924, Sious Falls, South Dakota. B.S., University of Oregon, 1950; M.A., University of Oregon, 1957. Served in U.S. Army, 1943-1945 and 1950-1953. Assigned as a Historian, Office, Chief of Military History, U.S. Army, 1958-1959; History Office, Ordnance Department, U.S. Army, 1961-1963; Command Historian, Office of Aerospace Research, 1963-1970; Chief Historian, Seventeenth Air Force, Germany, 1970-1976; Senior Historian, Office of History, Headquarters Air Force Systems Command since May 1976.

GLOSSARY

AFAL	Air Force Avionics Laboratory
AFCRL	Air Force Cambridge Research Laboratories
AFLC	Air Force Logistics Command
AFML	Air Force Materials Laboratory
AFOSR	Air Force Office of Scientific Research
AFRD	Air Force Research Division
AFSC	Air Force Systems Command, Air Force Specialty Code
AGARD	Advisory Group for Aerospace Research and Development
ARDC	Air Research and Development Command
ARL	Aerospace Research Laboratories
ARPA	Advanced Research Projects Agency
CCC	Commodity Credit Corporation
CONUS	Continental United States
DCS	deputy chief of staff
DDR&E	Director of Defense Research and Engineering
DoD, DOD	Department of Defense
EOAR	European Office of Aerospace Research
EOARD	European Office of Aerospace Research and Development
ERO	European Research Office, U.S. Army
ESD	Electronic Systems Division
FJSRL	The Frank J. Seiler Research Laboratory
FTD	Foreign Technology Division
FY	fiscal year
JDLC	Joint Deputies for Laboratories Committee
LASA	Large Aperture Seismic Array
MAAG	Military Assistance Advisory Group
MOA	Memorandum of Agreement
MOD	Ministry of Defense
MOMO	Memorandum of Mutual Objectives
MOU	Memorandum of Understanding
MWDT	Mutual Weapons Development Team
NATO	North Atlantic Treaty Organization
NERCP	Naval European Research Contracts Program
NORSAR	Norwegian Seismic Array
OAR	Office of Aerospace Research

ONR/L	Office of Naval Research/London
OSD	Office of the Secretary of Defense
PDO	Property Disposal Officer
PR	Purchase Request
QRC	Quick Reaction Capability
QRF	Quick Reaction Funding
SAB	Scientific Advisory Board
SAFRD	Secretary of the Air Force (Research and Development)
USAF	United States Air Force
USAFE	United States Air Forces in Europe

INDEX

APPENDIX 1

DETACHMENT #38
EUROPEAN OFFICE OF AEROSPACE RESEARCH AND DEVELOPMENT (EOARD)

Western European Office, Air Research and Development Command, was established at Brussels, Belgium, and assigned to 6590th Special Activities Squadron, eff 22 Aug 52	ARDC GO-48 14 Aug 52	Administration of the Command's European contractual research program. ("Western" was eventually dropped from the title.) [All sources indicated the title "European Office" was continuous. No order which designated the Office as Det 1 could be located.]
Det #1, 6590th Special Activities Squadron (European Office, ARDC) discontinued, eff 15 Jan 60	ARDC GO-8 12 Jan 60	
Det #1, AFRD (European Office, ARDC) designated and organized at Brussels, Belgium, eff 15 Jan 60	ARDC GO-8 12 Jan 60	
Det #1 (European Office, ARDC) redesignated Det #1 (European Office, Office of Aerospace Research), eff 1 Apr 61	OAR SO G-8 1 Apr 61	Reorganization of major commands.
Det #1, OAR (European Office, Office of Aerospace Research) discontinued, eff 8 Oct 63	OAR SO G-25 7 Oct 63	
European Office of Aerospace Research constituted and activated at Brussels, Belgium, and assigned to OAR, eff 8 Oct 63	OAR SO G-25 7 Oct 63	
European Office of Aerospace Research, OAR, reassigned to AFSC, eff 1 Jul 70	AFSC SO G-65 12 Jun 70	Consolidation of OAR/AFSC with OAR functions transferred to appropriate elements of AFSC.

DETACHMENT #38
EUROPEAN OFFICE OF AEROSPACE RESEARCH AND DEVELOPMENT (EOARD) (cont)

European Office of Aerospace Research moved from Brussels, Belgium, to London UK, eff 20 Jul 70	Historical Rept of EOAR 1 Jul - 31 Dec 70	
European Office of Aerospace Research, AFSC, inactivated at London UK, eff 1 Jul 71	AFSC SO G-86 28 Jun 71 Amended by AFSC SO G-89 13 Jul 71	
Det #38 (EOAR), 6590th Special Activities Squadron, designated and activated at London UK, and assigned to AFSC, eff 1 Jul 71	AFSC SO G-86 28 Jun 71 Amended by AFSC SO G-89 13 Jul 71	Personnel transferred from European Office of Aerospace Research (EOAR).
Det 38 (EOAR), 6990th Support Squadron inactivated at London UK, eff 31 Jul 72	AFSC SO G-103 31 Jul 72	
Det 38, HQ AFSC (EOAR) designated and activated at London UK, and assigned to HQ AFSC, eff 1 Aug 72	AFSC SO G-103 31 Jul 72	
Det 38, HQ AFSC (EOAR) redesignated Det 38, HQ AFSC (EOARD), eff 1 Aug 73	AFSC SO G-80 30 Jul 73	
Det 38, HQ AFSC (EOARD), inactivated at London UK, eff 1 Jul 74	AFSC SO G-65 26 Jun 74	
Det 1, AFOSR (EOARD) designated and activated at London UK, and assigned to AFOSR, eff 1 Jul 74	AFSC SO G-65 26 Jun 74	

APPENDIX 2

DEPARTMENT OF THE AIR FORCE
Headquarters Air Force Systems Command
Andrews Air Force Base Washington DC 20331

AFSC REGULATION 23-57

31 July 1970

Organization and Mission—Field

EUROPEAN OFFICE OF AEROSPACE RESEARCH

This regulation prescribes the mission and responsibilities of the European Office of Aerospace Research (EOAR).

1. **Mission.** EOAR is assigned the mission of securing in the free world countries of Europe, the Near East, the Middle East (including India, Burma, and Ceylon) and Africa, scientific R&D efforts in support of the program of Air Force organizations and of providing scientific liaison which fosters mutually beneficial relations among the United States and the scientific communities of those areas.

2. **Organization.** EOAR, as an Air Force controlled unit, reports direct to the Commander, AFSC, and is the equivalent of a numbered Air Force.

3. **Special Responsibilities.** The Commander, EOAR, is assigned the special responsibilities listed below:

a. Fosters an exchange of information between Air Force R&D and organizations and the free world scientific communities of Europe, the Near East, the Middle East (including India, Burma, Ceylon) and Africa, to create an awareness within those scientific communities of the R&D interests of the Air Force, and identify Air Force agencies potential sources of R&D efforts related to Air Force programs.

b. Receives R&D proposals of interest to the Air Force and refers them to appropriate Air Force organizations.

c. Negotiates, executes, and administers procurement actions in the free world countries of Europe, the Near East, the Middle East (including India, Burma, Ceylon) and Africa as required to support scientific and technical programs sponsored by the US Air Force, US Navy, and other US Government agencies.

d. Provides advice and consultation to the Commander, AFSC, and other Air Force organizations on matters pertaining to R&D capabilities of the scientific communities of the free world countries in Europe, the Near East, the Middle East (including India, Burma, Ceylon) and Africa.

4. **Direct Communication.** The Commander, EOAR, is authorized to communicate direct with other US Air Force organizations, other US Government agencies, free world government agencies of Europe, the Middle East (including India, Burma, Ceylon) the Near East, and Africa, and the scientific and industrial communities of these geo-political areas, as required in the conduct of the EOAR mission and responsibilities. The Commander, EOAR, will assure that communications, both oral and written, of the following types, which are addressed to Office of the Secretary of Defense, Office of the Secretary of the Air Force, and the Air Staff, are referred to or routed through AFSC (DL).

a. Communications regarding AFSC position, policy, or direction.

b. Communications committing AFSC resources, manpower, funds, or logistics.

c. Special arrangements on planned or tentative programs.

FOR THE COMMANDER

J. C. HUNTLEY, Colonel, USAF
Director of Administration

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DEPARTMENT OF THE AIR FORCE
Headquarters Air Force Systems Command
Andrews Air Force Base, DC 20334

APPENDIX 3

AFSC REGULATION 23-57

12 October 1973

Organization and Mission - Field

EUROPEAN OFFICE OF AEROSPACE RESEARCH AND DEVELOPMENT

This regulation prescribes the mission and responsibilities of Detachment 38, European Office of Aerospace Research and Development (EOARD), HQ AFSC.

1. Authoritative Source for Contents. AFR 23-8.

★2. Mission. Det 38 (EOARD) is assigned the mission of supporting Air Force research and development laboratories, divisions, centers, and System Program Offices by acquiring unique and important research, development, and manufacturing technology of potential and direct usefulness to the Air Force; providing liaison with members of the scientific and engineering community in Western Europe, the Middle East, Africa, India, Burma, and Ceylon; and encouraging open communications between Air Force scientists and engineers and their counterparts within the EOARD area of responsibility.

3. Organization. HQ AFSC (DL) provides operational control over Det 38 (EOARD) and also provides facilities and resources for mission accomplishment.

★4. Responsibilities. The Commander, Det 38 (EOARD) is responsible for:

a. Maintaining liaison with the scientific and technical communities in Western Europe, the Middle East, Africa, India, Burma, and Ceylon to encompass the spectrum from research and development through manufacturing technology.

b. Promoting the exchange of technical information to insure a constant, timely flow of scientific and technical information to HQ AFSC, and AFSC field commands and laboratories.

c. Screening proposals from foreign scientists and engineers, identifying those of interest to Air Force laboratories, centers, and divisions; and referring these proposals to appropriate AFSC organizations for further evaluation and possible financial support through contracts or grants.

d. Providing administrative and technical assistance requested by AFSC organizations in processing appropriate foreign proposals and monitoring foreign contracts.

e. Encouraging cooperative US and European RDT&E programs to include data exchange annexes and information exchange projects. AFR 80-21 prescribes the procedures for instigating and processing the resulting cooperative projects.

f. Fostering the exchange of R&D information through attendance at scientific and technical meetings, promoting scientist and engineer exchanges such as the Window on Science and Visiting Scientist Programs, and supporting visits by European scientists and engineers to the United States.

g. Maintaining a contract or grant capability to provide the Air Force an option for procuring European-developed items of equipment and unique technological or geographical capability.

h. Coordinating and interfacing with other US technical personnel in Europe to include the MAAGs, Air Attaches, NATO, and HQ USAF R&D liaison offices.

i. Sponsoring a limited amount of foreign research recognized by the Commander to be of considerable merit to the Air Force and managing funds provided to enable quick reaction to research opportunities which cannot be otherwise accommodated.

j. Conducting exhaustive studies of foreign R&D capabilities related to pertinent topics selected by HQ AFSC (DL) from those submitted by AFSC laboratories, divisions, and centers. Laboratory scientists and engineers on TDY in Europe will be expected to provide inputs into these studies.

k. Keeping HQ USAF and HQ AFSC informed of current R&D activities by means of the following: Weekly activity reports and quarterly status reports to AFSC/DL; semiannual oral reports to the Commander, AFSC, AFSC/DL, laboratory commanders, and HQ USAF, trip reports, unusual or special events notifications, and semiannual division support reports to AFSC/DL.

l. Recommending to HQ AFSC (DL) the assignment of AFSC exploitation teams of qualified technical personnel to assist in fully exploiting specific technical areas identified by EOARD to be of particularly high interest to HQ AFSC.

5. Relationship to Other Units or Agencies:

a. Communications. The Commander, Det 38 (EOARD), is authorized to communicate directly

Supersedes AFSCR 23-57, 28 December 1971. (For summary of revised, deleted, or added material, see signature page.)
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with other MAJCOMs, other US Government agencies, and government agencies and scientific communities of the countries identified above. The Commander will assure that communications, both oral and written, of the following types which are addressed to OSD, OSAF, and HQ USAF are referred to or routed through AFSC/DL.

(1) Communications regarding AFSC position, policy, or direction.

(2) Special arrangements for planned or tentative programs.

b. AFR 11-4 Support. Det 38 (EOARD) will use AFR 11-4 procedures to obtain necessary support services in its geographical area of assignment.

☆c. Relationships. AFOSR will handle procurement actions for Det 38 (EOARD).

OFFICIAL

SAMUEL C. PHILLIPS, General, USAF
Commander

C. M. DAILEY, Lt Col, USAF
Acting Director of Administration

SUMMARY OF REVISED, DELETED, OR ADDED MATERIAL

This revision reassigns and redesignates this organization as Det 38 (EOARD). It expands the mission to include development.

APPENDIX 4

COMMANDERS OF THE EUROPEAN OFFICE OF AEROSPACE RESEARCH AND DEVELOPMENT AND ITS PREDECESSOR ORGANIZATIONS

Commander	Tenure
Lt Col Ralph J. Nunziato	Aug 52 - Sep 55
Col Lee V. Gossick	Sep 55 - Jan 56
Brig Gen Don Flickinger	Jan 56 - Jul 57
Col Lee V. Gossick	Jul 57 - Jun 58
Col Nathan L. Krisberg	Jul 58 - Aug 60
Col Paul F. Nay	Sep 60 - Aug 63
Col George P. Jones, Jr.	Sep 63 - Jul 65
Col Jack L. Deets	Jul 65 - Jul 68
Col Burl R. Williams	Jul 68 - Jul 70
Lt Col Anthony J. Mione (Actg)	Jul 70 - Jun 71
Lt Col Richard B. Wallace (Actg)	Jun 71 - Oct 71
Col Gordon E. Danforth	Oct 71 - Jun 73
Col Robert V. Hemm	Jun 73 -

BIBLIOGRAPHICAL NOTE

Chapters 1 and 2 are based, in part, on Dr. Ernest G. Schwiebert's account in the History of the Air Research and Development Command for July-December 1956 and Dr. David Bushnell's delineation in the History of the Office of Aerospace Research for January-June 1962 of the early years of the European Office. Chapters 3 through 5 are based on the author's reseach in EOAR publications; letters, messages, memoranda, and reports from the EOAR files; and in interviews with various key personnel in the European Office, the Air Force Systems Command, and the Air Force Office of Scientific Research.